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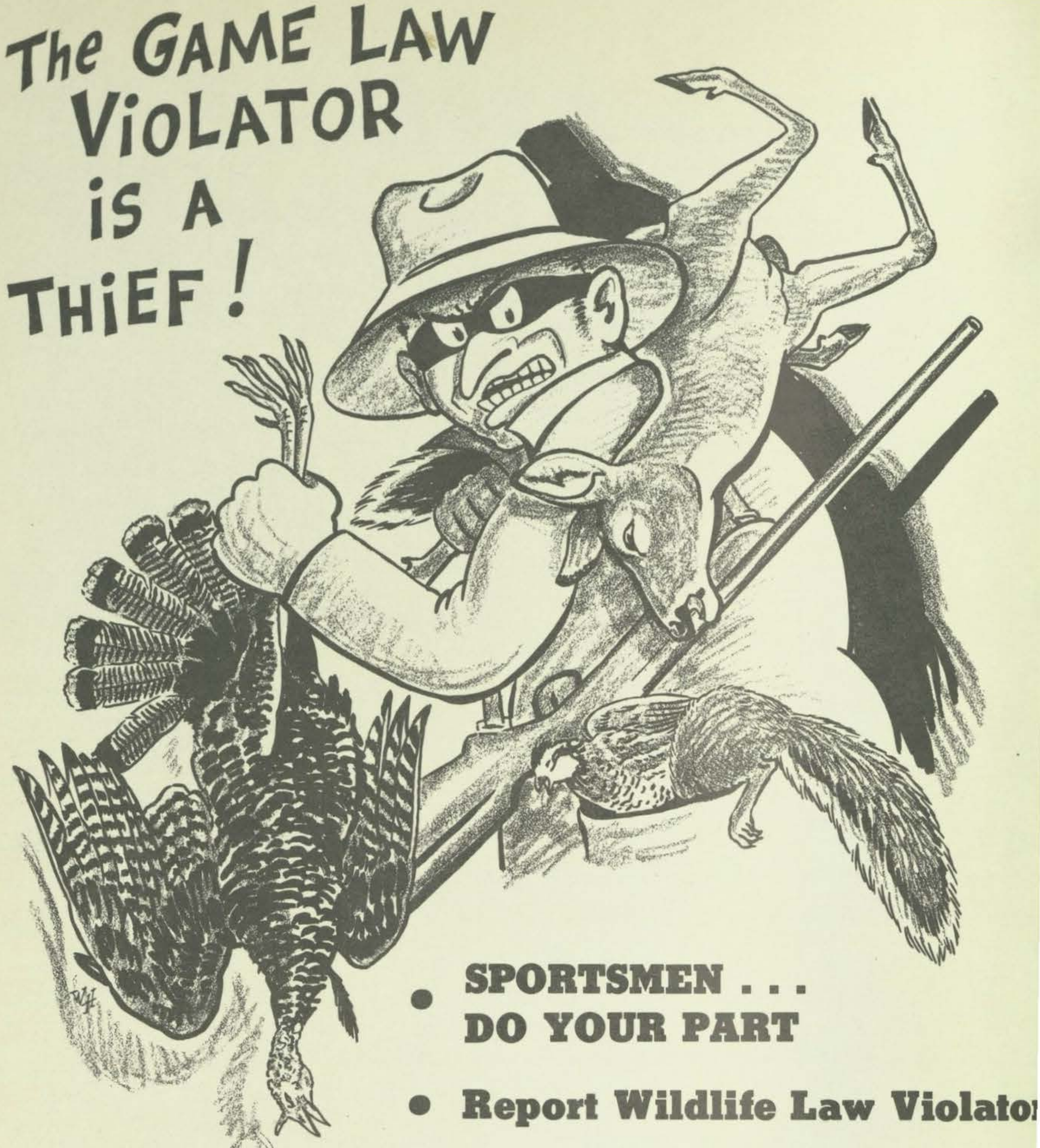
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GAME & FRESH WATER FISH COMMISSION
FLORIDA

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Volume 36, No. 3
September-October
1982

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Dedicated to the appreciation and enjoyment of our wildlife heritage, and to a fuller understanding of efforts directed toward the protection, restoration, enhancement and wise use of our natural resources.

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FLORIDA WILDLIFE (ISSN 0015-4369) is published bimonthly by the Florida Game and Fresh Water Fish Commission, Farris Bryant Building, Tallahassee, FL 32301. Single copy price-$1.00, including state sales tax. Subscription rates, 1 year, $5.00; 3 years, $14.00. The Commission assumes no responsibility for unsolicited manuscripts and illustrative materials. Request for permission to reprint illustrations or text should be addressed to: Editor, FLORIDA WILDLIFE. Second class postage paid at Tallahassee, Florida, and other points of entry. Post Office Publication Number 202440.

**Printed by Hillsboro Printing Co.
Tampa**

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**Typeset by Game & Fresh Water
Fish Commission Word
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FLORIDA WILDLIFE

Published by Florida Game & Fresh Water Fish Commission

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THE COVERS

Two of James Hutchinson's 50-painting commission to depict Seminole and Miccosukee history. On the front—Two Indian scouts check out tracks while soldiers wait in the background. On the back—Using deer skin camouflage, hunter slips within bow range of whitetails.

Billie Kay Smith

Nobody Knows The Trouble I've Seen

I'm not sure why, but my experiences outdoors have always been marked by miscues and bizarre happenings. I have watched famous sportsmen such as Curt Gowdy or Ted Williams with more than a little envy as they bagged game or fought mammoths from the deep with an ease and grace that somehow eludes my own sporting endeavors.

My problems go back even to my youth. I remember my brother John and I fishing a Florida creek from the bank with cane poles and live bait late one afternoon as teenagers. When night came we started home on foot. It was necessary to cross a long railroad trestle which extended over a deep ravine. In the darkness, it was impossible to tell how far we had progressed toward the other side when we heard the sound of an approaching train. Not knowing if we could clear the trestle in time, we hung over the edge with our legs dangling in the night air waiting for the train to pass. Unfortunately, it was a long one and my young arms grew increasingly tired as the train rambled on endlessly. Finally, I could hold on no more. Turning to John, I said nobly, "I can't make it. Tell Mother I love her." Envisioning a prolonged fall to a brutal death, I released my grip and dropped all of six inches to solid ground. It seems we were much closer to the opposite slope than we had realized!

That's not the only time I've flirted with disaster while cane pole fishing. A few years ago John and I were pole fishing from our boat in a small southern river when I adeptly snagged my hook in the branch of a tree overhanging the bank. As John maneuvered our boat closer, I reached upward into the leaves to free myself but stopped abruptly. The hook was embedded in a limb mere inches from a huge hornet's nest. Leaving pole and line, we quickly fired our Evinrude and "got out of Dodge!"

Fifteen minutes later, we heard shouts and the revving of an engine from around the bend in the river just behind us. In moments, two guys came "roostertailing" by with a swarm of hornets in hot pursuit. It wasn't difficult to surmise that they'd figured they would grab a nice cane pole some fool had left behind. At least this time the last laugh was on someone else.

But I wasn't as lucky this past fall. I was in a forest trampling some bushes with my foot to make a temporary hunting blind when I casually noticed that I'd evidently disturbed a couple of yellow jackets. Taking little notice, I continued my work. Unhappily, the yellow jackets were clearly more concerned than I and one stung me on the hand. At this, I stepped out of the bushes to survey the situation. Seeing no real need for alarm, I confidently resumed my activity. Well, I guess I undoubtedly finally put my foot in one place too many, for a dozen yellow jackets converged on me. Trying to maintain some dignity, I swatted at them and quickly backed off fifty feet from the trouble spot. With the intention of letting things calm down while I waited in my new strategic position, I quickly realized that those yellow jackets had different ideas altogether. Before I could say "Sweet Jesus and General Jackson" they were on me again with reenforcements. I prudently and rapidly retreated a hundred feet more before stopping. I had still salvaged some dignity and felt reasonably assured that I had now moved beyond their realm of interest. Wrong! They blitzed me again, stingers popping. At this point, dignity and pride were shelved. I dropped my gear and, buddy-I ran! I was flailing with my arms and hollering all the way. I don't know what was to be gained by yelling, but it sure seemed like a good idea at the time. They were still after me when I came to a forest pond and busted the surface like a scalded bear. Obviously, I survived the attack, but I gained an all new respect for yellow jackets!

Another hunting expedition found me in a tree stand, quiet and motionless, on a crisp November morning. My brother was in another not far away. So far I had done everything right. However, I was not the only fool in the woods that day. A stranger appeared in the early morning light, walking through the forest with his deer hunting equipment, the most conspicuous of which was a long aluminum ladder. Unaware of my presence, he walked directly under me, at which point he tripped and fell, ladder and all, sending a metallic clanging sound reverberating through the trees. As he rose, he was startled to see me above him.

"You seen any deers?" he shouted.

I didn't know whether to laugh or cuss (I think even the Pope would have condoned a bad word or two given the circumstances), but answered politely, "No!"

Picking up his paraphernalia, he stumbled onward in the direction of my brother. As he drew near, John shined his flashlight at the stranger to indicate his presence.

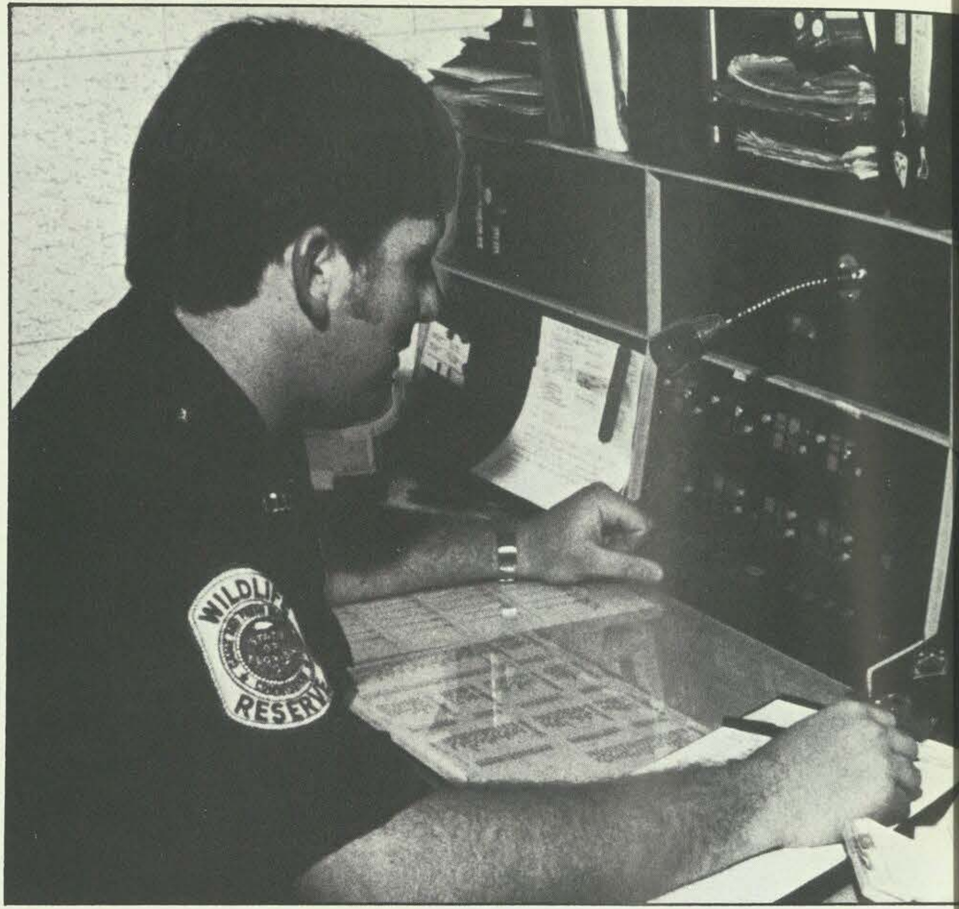
"There's people all over these blankety-blank woods!" he roared and quickly thrashed on through the bushes out of sight. I guess it was just a bizarre morning, for soon after that incident I heard a growling and spitting sound coming from another direction beyond a nearby ridge. I gazed that way in time to see a big bobcat coming over the hill in full stride and in a rather incensed manner. Moments later, a large black bear came bounding over the hill with similar displeasure and disappeared from view like the wildcat had previously. I didn't know what was coming over that ridge next, but I didn't wait to find out. I beat John back to the truck by a length!

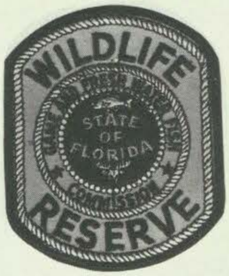
This disclosure of woe could go on indefinitely, but I believe you have the picture. Perhaps you can even relate. For every skilled sportsman such as Curt Gowdy, maybe there are 50 more like me. Or, perhaps I've been singled out as an object of some of God's little jests. If the latter is correct, then my lament certainly rings true—nobody knows the trouble I've seen! □

By William Smith

Billie Kay Smith

Hard working volunteers are assisting the Game and Fresh Water Fish Commission in carrying out its duties. They are members of the





Wildlife R

Probably no other word in the American language can match the spirit of cooperation and accomplishment as that perceived when one thinks or hears the word "volunteer." People visualize the soldiers in the Continental Army at Valley Forge, and men like Davey Crockett and Daniel Boone who gave generously of themselves and their resources.

It is volunteers who work together for a major purpose or goal with no rewards except for those within themselves. People who donate their time, knowledge, and skills to worthwhile endeavors and even share their blood with their fellow man are called volunteers.

A new contingent of volunteers has arrived on the scene. They are the Wildlife Reserves, whose function is to assist the Game and Fresh Water Fish Commission in carrying out its duties.

How did a program such as the Wildlife Reserve become a reality? Back in 1966 or 1967, Capt. David E. Swindell, then Commission personnel officer in Tallahassee, and Lt. Jim Reed, education officer in Ocala, set about to organize a program and establish a pilot organization in the Central Region. In 1968 a meeting in Ocala was attended by 19 interested citizens, and the Wildlife Reserve program was launched. Of those attending that first meeting, two, Arthur Remnet and Harry Bertossa, are still active in the program.

All the problems usually encountered in new programs surfaced, and as time passed, modifications were made. For instance, the operations manual for this pilot organization consisted of one mimeographed page. Monthly meetings were held and each reservist was asked to donate at least 12 hours of work time per month. Since only three counties were involved, 19 reservists were the full force of the organization.

In 1979, after nearly 10 years of "birth pangs" the Wildlife Reserve program went statewide. Reserve coordinators were financed in all five regions and a full-scale recruiting program began to enlist the aid of selfless men and women.

Now there are 226 active members in the Reserve program who donated 38,318 hours of work to the Commission last year. Many of these functions would have been performed by regular personnel in addition to, or at the expense of, their regular duties.

The sort of people who make up the Reserve are about the same cross-section you find in church. They are real estate brokers, farmers, school teachers, laborers, dentists, ranch hands, students, foresters, construction workers, housewives and just about any other occupation one could imagine. Some of these reservists are recently out of high school while others have retired after 30 or more years of service in a profession. They range in age from 19 to 60-plus.

Some younger reservists got involved in the program because of a desire to eventually become permanent, full-time employees with the Commission. Being a reservist does not, in any way, ensure the individual will become a wildlife officer, but it does expose him or her to regular monthly training sessions the general public would be unable to attend. For instance, the basic Police Standards course, which consists of 380 hours at a junior college or a police academy, is only offered to those people who are sponsored by some branch of law enforcement such as the Commission, a sheriff's department, police department or highway patrol.

Not all reservists participate in law enforcement activities, choosing instead to channel their endeavors into wildlife management, fish management, informational services or communications. Complete specialization in any one field is frowned upon, though.

An ongoing training program ensures reservists of up-to-date information on all phases of Commission activities. After a year of participation in the reserve program and the instructions received at the monthly meetings, reservists have a very good grasp of the demands made on Commission personnel.

This type training allows reservists to participate with full-time wildlife officers in water patrol on lakes and rivers, night patrol looking for illegal

serve Program

Walt Meggison

Wildlife reservist serving as a Commission radio base station operator, opposite page. Another duty is assisting biological research efforts, left. Here a turkey is being banded for later identification.

By
Lew Whitacre

Lieutenant, Wildlife Reserve

Wildlife Reserve Program

hunters, following up on complaints from landowners and checking licenses and permits during hunting season.

Their training by full-time wildlife biologists allows reservists to collect wildlife data in the field. They are often called on during hunting season to weigh, take specific measurements, dress, and collect the fourth stomachs and reproductive tracts of deer to be studied at a later date. Reservists so inclined are taught to count the parasites present in a deer's stomach. An analysis of this data is used in making wildlife management decisions.

Training by fisheries biologists or technicians qualifies these reservists to conduct creel surveys, assist in sampling lakes with nets to determine the number of fish per acre of water, whether bait fish need to be provided, and when and where fish attractors should be located.

All Commission vehicles are equipped with radios, thus radio communications are a vital phase of the training program. All reservists receive training in the use of Commission radios and those who wish receive additional training in the communications center at regional headquarters to become qualified as radio operators for use in an emergency situation.

Overall, reservists receive more training than full-time personnel because they are expected to perform in any and all phases of Commission activities whereas full-time employees are generally involved only in their own field.

The reserve program is not a card-carrying-country-club-type of organization. Reservists are expected to attend the monthly training sessions. They contribute a minimum of 12 hours work each month, provide their own transportation to and from work assignments, and furnish their own uniforms and incidental expenses such as meals and lodging when necessary. A complete uniform will cost a minimum of $150. This initial outlay is the greatest expenditure. Other on-going expenses include travel to meetings, meals, and phone calls to supervisors concerning work schedules.

Twice each year some regions hold a meeting for all reservists and have a cookout. Sometimes it's a mullet fry or maybe it's a wild hog and swamp cabbage affair. Horseshoes, volley ball, shooting contests and fellowship do a great deal for any organization and the reservists are no exception.

In these times of greed, selfish interests and "can't get involved" attitudes, it's quite gratifying to know there's still a group that donates its time and efforts to public service and the furtherance of conservation programs.

Remember there is one group like this that is more than willing to discuss the program with you and perhaps enlist your aid if you are inclined to become involved in the Wildlife Reserve program. □

Walt Meggison

Some reservists who are sponsored by a law enforcement agency may receive the basic police standards course. This includes marksmanship training.

By CHARLES WATERMAN

The Trend To Smaller Fishing Lures

For more than 30 years, the trend has been toward smaller lures for freshwater fishing—and for some of the salt as well. Part of this has been a matter of tackle that will accommodate light or small baits. Part of it may be a willingness to fish for smaller fish and part of it is a belief that big fish actually prefer something smaller most of the time.

The small lure business began with spinning tackle and is encouraged by free-spooling casting reels. Where fly gear is concerned, tackle has had little to do with it.

Modern fly rods are capable of throwing immense feather follies, but the flies have been getting smaller. Nowhere is it more obvious than in the tarpon business. When I first tried tarpon fishing with a fly rod, the only limiting factor in my streamer size was the length of feathers a rooster was capable of growing. This came out at about six inches once the thread head was wrapped on.

Then came the four-inch streamers as accepted by record hunters who scour the Keys and Homosassa country. While I was looking for a rooster with longer feathers, some good snook fishermen were announcing that a three and one-half-inch streamer was just as good. I still haven't quite accepted that on snook, but it works pretty well.

The latest of the streamers for big tarpon is about three inches long and an inch of that is the thread-wrapped head. I don't know if they have definite proof that it's better than the biggies, but some record hunters are betting their reputations on the smaller flies, even though they stick with fairly big hooks.

Of course, one of the reasons for big bass plugs in the old days was that average fishermen didn't have tackle to throw small ones. The first baitcaster I knew who used quarter-ounce baits had a special technique with an old-style Pflueger Supreme reel. I couldn't cast his rig worth a dang. It took practice. I still don't know if the smaller baits caught as many big fish. I am sure they did just as well or better with smaller ones.

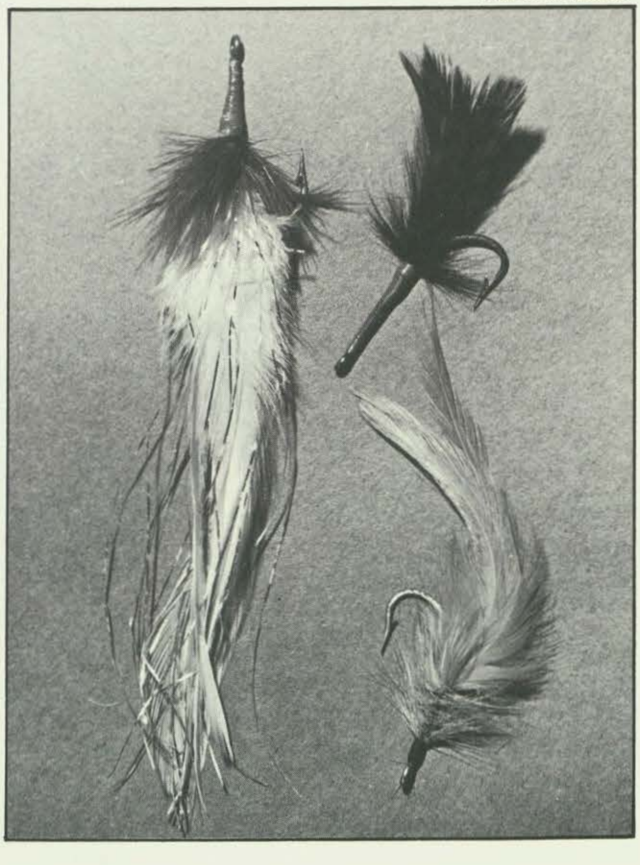
I always felt that a disadvantage of the Rapalas and other lures of that type was too little weight in smaller sizes. In order to choose a balsa number which would cast well with a medium plugging rod, you had to have a bait that was pretty long. Spinning worked better with them and, even when you could throw them with a plugging outfit, your accuracy suffered. Lighter plugging tackle of today improves the situation.

The small, light lures have better action on the surface most of the time and some of the balsa or ultra-light plastics will dance about like a real baitfish of their size. I don't doubt that an occasional outsized bait might attract an especially large fish that wouldn't bother with the others.

Being mostly thumbs with plastic worms, I have nevertheless followed their developments with interest. While the big ones of garter snake propor-

Trend toward smaller lures is shown in tarpon streamers. The larger one is the older one and the smaller is a current model.

Charles Waterman



tions still have their uses, there are more and more small worms, most of them with shapes or gimmicky tails that are more lively than any living worm ever aspired to be. So, some of the highly effective and trickily shaped small plastics don't imitate worms at all.

One feature of the smaller worms is that they have generally better hooking qualities when they are moved fast. With a worm as long as the fish, a bass sometimes grabs in the wrong place and doesn't get the whole thing inhaled. The fast-moving worm doesn't replace the ones that are humped gently along the bottom, but they are one more way of doing it and today's worm fisherman can get by very nicely with nothing else in his box, working from surface to bottom.

Shiner fishermen after trophy bass certainly haven't gone for anything like miniature baits and many fishermen would be happy with a stringerful of fish the size the lunker chasers use for bait. How does this fit in with the "small bait trend?"

These fellows aren't interested in the smaller bass for one thing. The big shiner eliminates most of them and it may have special appeal for lunkers because they don't have competition from small fish that tend to be fleeter of fin. Then, too, the carefully trolled or cast big shiner doesn't look as if it could get away from a portly monster and appears well worth pursuit.

Those big shiners aren't likely to be showering like schools of little ones. There's no premium on matching the size of bait as the single big shiner is probably a loner and, when on a hook, appears to be in all of the trouble he is.

Smaller baits are stylish.

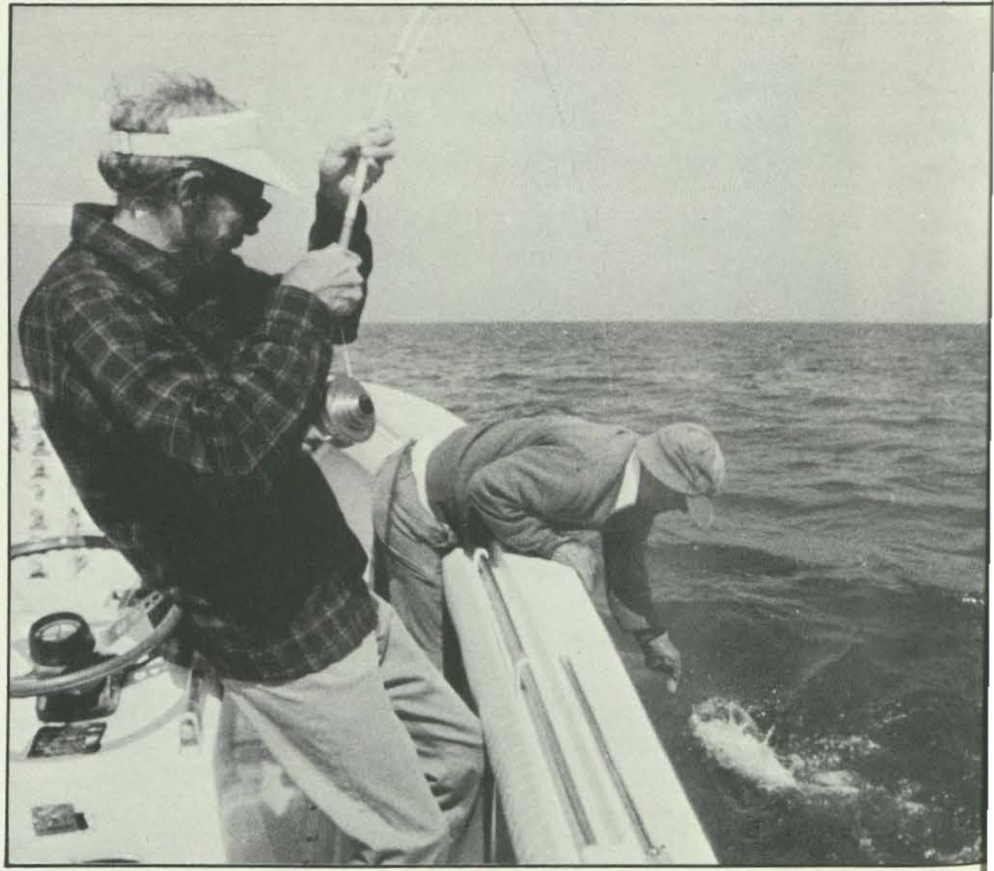
Disappointing Bass Lakes

I have never caught a bass in what appears to be the best bass lake I have ever fished. It's a backwoods spot with no real boat ramp and it has a variety of depths with plenty of cover. If there are any bass there, I don't know how to catch them—in the bonnets, along the grass or on the edges of the little underwater ridges.

We fish another boondock lake that seems to have plenty of bass. We have worked it for 10 years and, although we have caught plenty, I don't think we ever landed one over two pounds. Most of what we have caught has been on surface plugs or popping bugs. The fish appear healthy but aren't particularly fat.

Then there's the third lake that looks great. Now and then there will be a bigger fish, but most of them are slender 10-inchers and, if they're longer than that, show the unmistakable large head of the

Charles Waterman



Trophy fish like this big jack crevalle should get plenty of pressure. Veteran anglers "play them fast." It's a pretty well known fact that experienced fish fighters land their catches quicker than do amateurs.

overaged fish that hasn't developed. Lots of groves around the lake and the runoff, perhaps, hurt things, but the bluegills come big and fat.

None of these lakes is fished very hard, certainly not hard enough to damage the population. They just aren't very good bass lakes—for me and my friends anyway. I'm not putting out any helpful information except to say that if you have a disappointing lake, you're not alone. I've known dozens of them.

The answer is seldom the introduction of more bass—or elimination of rough fish or panfish. Although the black bass is one of the most studied fish of all, and certainly the most sought, the makeup of a good bass lake can be a mystery, even to biologists unless they make extensive studies. Even they can't be sure of just what is right or wrong.

In rare cases, the fish are there, but insist on some unusual fishing approach. However, when you catch plenty of small ones only, the chances are the big ones are scarce.

The most common fault in approaching a mystery lake is to use the fish training system—insisting the fish strike your pet lures whether they're surface plugs, plastic worms or oversized shiners. Many fishermen just don't want the fish that doesn't agree with them on method and that's all right too. But if you're willing to do anything that's legal and still can't score, you probably have one of those lakes that just doesn't accommodate many fish.

So, after you've tried it at all hours of the day and night with everything in your tackle box and bait, well without results, maybe you'd better look for another place, even if you've bought a split-level home on the shore. Even your friendly fisheries biologist can't always tell about bass lakes.

Landing The Big Ones

Landing big fish once they're hooked always seemed to me like a minor part of the program—but it's tough for most anglers because it usually takes long fishing experience to meet up with only a few real whoppers. It's pretty well known that veteran fish fighters land them quicker than do amateurs.

There's a partly true rule that after the first run, the longer you have him on, the less likely you are to land him, what with the hook wearing out, tackle succumbing to pressure and the added chances of foul ups. Of course, the rule is baloney as it's worded, but the idea is right.

Unless he hung up in something and had to be dug out, I don't recall any black bass resisting for more than six minutes. Bonefish are supposed to be one-run-and-then-curtains, but I once wrestled a big one for 20 minutes when I couldn't get his head up with a fly rod in three and one-half feet of water.

Most big tarpon should be landed in 30 minutes, they tell me. That's assuming the water is shallow and the tackle fairly sturdy. I fumbled around for an hour with a marlin and they said it should have been landed in half that. I fought a 30-pound dolphin for an hour on a fly rod—but that was deep water and I couldn't stop him from digging. Snook fights are wild but short along shorelines, and 15 minutes would be a very long time to hold any snook on any tackle. He should be landed or gone by then. I once spent a long time and a quarter-mile of bank following a big steelhead, but that was in fast water and the hook was outside his mouth.

Fish playing is simple but not always easy—so is lifting 400 pounds. I know of no place you can get a lot of practice fast on big fish. The nearest to it is checking your tackle against a post. At least you find what it will take—and many anglers use only two pounds of strain when they think they're giving it 20.

Troubled Waters

It's the ocean edges that are giving us the most trouble. Inland, there are enough big reservoirs to accommodate many times as many black bass as met the early settlers. The trout streams, long suffering from crowded fishermen and land development but subject to intensive study, are pretty well understood. Now it is the estuaries that demand attention.

Lately there have been more and more appeals from steelhead fishermen of the Pacific Coast where steelhead rivers have been ruined by damming and industrial development. Now they say the artificially propagated steelhead (once believed a solution) can't really take the place of truly wild strains.

The Atlantic salmon people fight is perhaps the toughest battle of all for they are concerned with a fish that is beyond the reach of most anglers and has been so scarce for so long on our shores that it has only a few followers, no matter how affluent those few may be.

But those are only a start at listing the battlegrounds. Almost invariably, the scene of strife is where fresh water meets the ocean—a zone which has been impossible to control up until now, and an area that still suffers from the ancient belief that there are fish clear across the oceans and we have little control of them and need few regulations. Managing the oceans, or even the edges of the oceans, still boggles creek and farm-pond minds.

Florida fishing is made up largely of these critical areas and serious fishermen should do some homework. □

WILDLIFE MANAGEMENT AREA PLANNING

Like islands unto their own, large tracts of state-regulated wildlife areas dot Florida's map, providing most all population centers of the Sunshine State ready access to wildlife-oriented recreation opportunities. These landholdings—totaling some 12 percent of Florida's land area and amounting to five million acres—comprise the state wildlife management area (WMA) system, a concept created in the early 1940s and serving hundreds of thousands of citizens each year.

In Florida's time of great population growth—a 40 percent increase is expected by the year 2000—the Commission, as steward of the state's wildlife resources, works deliberately to find additional land tracts and to improve management on existing lands to provide settings for people to enjoy the abundant resources of the Florida wilderness. But the number of people wanting to use wildlife management areas is increasing by some 10 percent each year.

While trying to meet this demand, the Commission is faced with a variety of challenges. Lands suitable for a wildlife management area are usually in relatively expensive agricultural or forestry production or, if located near population centers, are in demand for development. The Commission's land acquisition trust fund ($3 from each WMA permit sold) grows by only $300,000 per year. With the cost of suitable lands at $1,000 or more per acre, many millions of dollars and many years are necessary to buy even a minimum-sized management area.

These are the primary restrictions to any accelerated growth of wildlife-oriented recreation settings. But the Commission is taking a dual approach to finding solutions. One is to continue to seek additional large tracts of land for purchase whenever possible, and lease when available; and secondly, to get the most out of lands presently within the WMA system.

An important tool in these efforts of the Commission is careful planning. When the Commission acquires a new area, a strategic plan is developed that will direct the natural resource and recreation management practices for the land and its use over the next 10 years. In addition, strategic plans are developed on lands presently within the management area system.

These include careful evaluations of land use possibilities. Based on this major study, decisions are made as to the land's use. Those reviewing landholdings are Commission wildlife biologists, fisheries biologists, and wildlife officers. Commission personnel inventory the wildlife and fish resources, and determine the natural amenities of the holding, from water bodies to flora and fauna. Using this information, decisions are made as to what recreational uses can be provided while maintaining and enhancing the natural productivity of the land for fish and wildlife.

After a general management approach is decided through a strategic plan, a more specific plan is developed—a 10-year operational plan—a facet with which the public can best identify. This plan "gives life" to the strategic plan and is a statement of management practices the Commission will conduct each year based upon available money and manpower. Each year, activities completed on an area during the past year are reviewed. The operational plan is then revised to incorporate any activities which were not completed into the following year's plans.

An operational plan typically takes about one year to complete. Initial meetings are held with management area personnel to outline the task at hand. Detailed information is compiled on: the acquisition history of the area, past management practices, soils, climate, vegetation, and wildlife and fish species present.

Given this information, the plan is developed on the kind and scope of those management practices necessary, using existing personnel and dollars to accomplish the strategic plan. In addition, activities which the Commission would like to do but which require additional funding or manpower are detailed. These "desired" activities become the basis for future funding requests to the Legislature.

Management activities planned for an area include prescribed burning, wildlife and fish surveys, managed hunts, collection of biological data on harvested animals, road and building maintenance, and forest management.

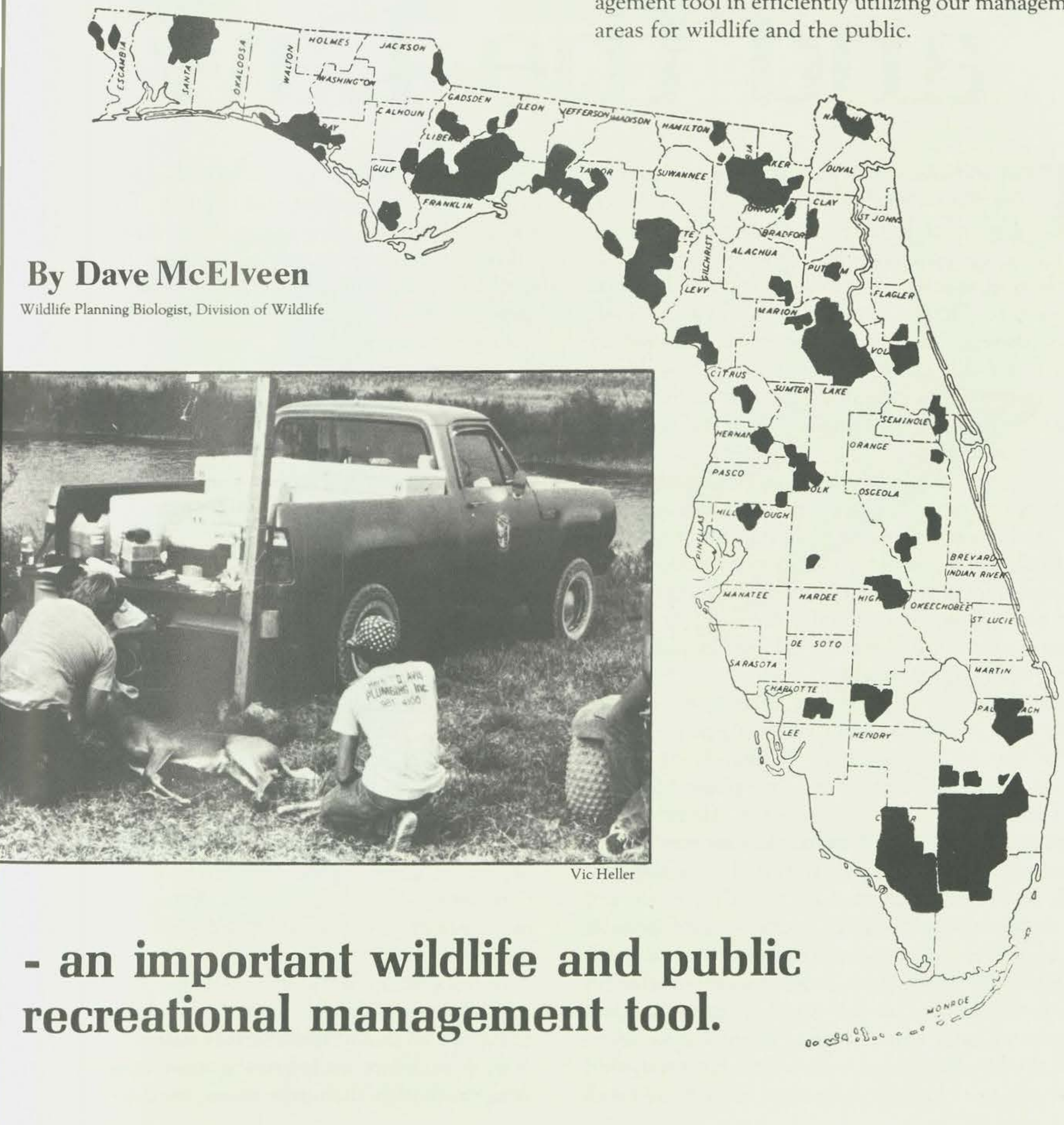
Commission personnel call the operational plan their blueprint for the management and public use of the wildlife management area. It serves as their guide for the next 10 years to ensure proper management of Florida's natural resource heritage.

Since 1979, 12 strategic and three operational plans have been completed. Of the strategic plans, 10 are for areas presently within the WMA system (Brown's Farm, Joe Budd, J.W. Corbett, Holey Land, Lochloosa, Rotenberger, Three Lakes, Tomoka, Tosohatchee and Cecil M. Webb) and two for areas soon to become WMAs (Seminole Ranch and Withlacoochee). The operational plans completed have been on the Commission-owned Joe Budd, Three Lakes and Cecil M. Webb WMAs.

In the immediate future, strategic plans will be undertaken for publicly owned lands for which the Commission has leases or cooperative agreements. Operational plans will be developed for the J.W. Corbett, Everglades and Seminole Ranch WMAs.

The benefits to the Commission of developing strategic and operational plans are in anticipating future needs of the WMA system and planning on how they will be met; informing the public and other government agencies of our management plans, providing continuity when personnel change, and helping anticipate needed personnel and funds for future budget requests.

Indeed, with available lands becoming increasingly scarce for public recreational opportunities, wildlife management area planning is an important management tool in efficiently utilizing our management areas for wildlife and the public. ☐



By Dave McElveen

Wildlife Planning Biologist, Division of Wildlife

Vic Heller

- an important wildlife and public recreational management tool.

FEATHERS and the Law

The next time you're prowling flea markets and the like where handcrafts are on display, beware of purchasing items with feathers. There is a good chance such pieces may include feathers of species protected by state and federal regulations. The law, in referring to "these species or parts thereof," makes no distinction between an entire bird skin (such as a mounted specimen) and one feather. As a case in point, it is technically a violation to keep even a single cardinal feather found in your own yard.

It may be difficult for most people to imagine how keeping or even selling or trading such bits of plumage could pose a threat of any kind to our wildlife. Actually, it's a case of trying to avoid weakening the enforcement of regulations by making exceptions to the rule. How, for example, does one go about determining if a bird was found dead or was intentionally shot for its feathers?

The situation, in good part at least, stems from plume hunters of the early 1900s. Appalled by the indiscriminate slaughter of thousands of plume birds, conservationists of the time pushed for protective measures. The result was the Migratory Bird Treaty Act of 1916. It stated that no person may take, possess, transport, barter, trade or sell migratory birds or their parts.

Under the law, the term migratory bird includes most species except such upland game birds as quail, grouse and pheasant. A licensed hunter is within his rights to keep the plumage of upland game as well as migratory game birds—ducks, geese, doves, snipe and the like—taken within the law. However, they may not be sold, except feathers of lawfully taken waterfowl which are to be utilized in the manufacture of fishing lures, clothing and bedding. The sale of waterfowl feathers for ornamental use is prohibited.

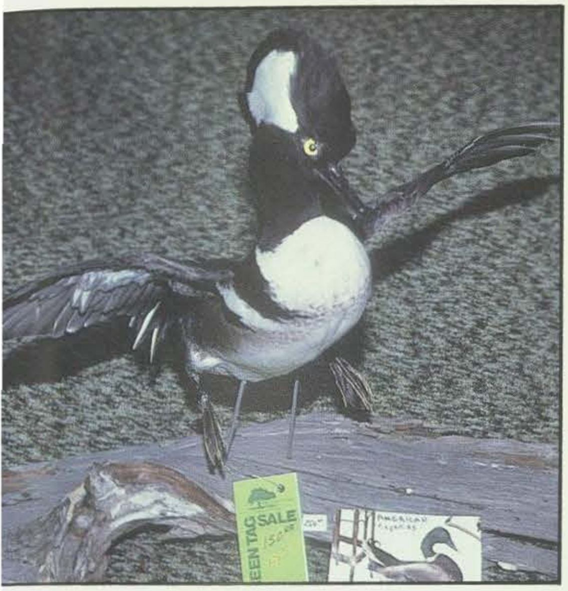
Feathers of game birds which are artificially propagated may be sold provided the source is clearly identified as a licensed game breeding facility.

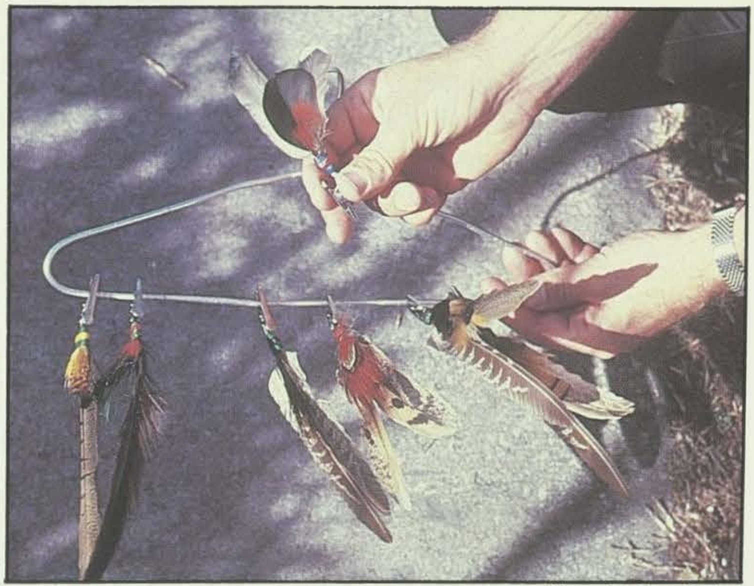
Although the Migratory Bird Treaty Act spelled the end of the widespread hunting of egrets and other plume birds, over the years there remained a persistent traffic in feathers and bird skins. Mounted birds, for instance, have been collectors' items for years. The legal aspect of possession was not always of great concern to collectors either.

In 1972, hawks, owls and eagles were placed under the protection of the Migratory Bird Treaty Act. Before that, mounted specimens were popular display items. Such mounts occasionally turned up at flea markets and garage sales. Do not buy them. Possession is a violation of both state and federal laws. The only way such a mounted specimen could be legally possessed is to have proof it was mounted prior to 1972 and it had been given, not sold, to you. Hawk and owl talons are also subject to the same restrictions as feathers and mounted birds.

In recent years, Indian craft items have become objects of considerable commercial traffic. Often these items—headdresses, peyote fans and the like—include feathers of protected birds. Their possession is illegal.

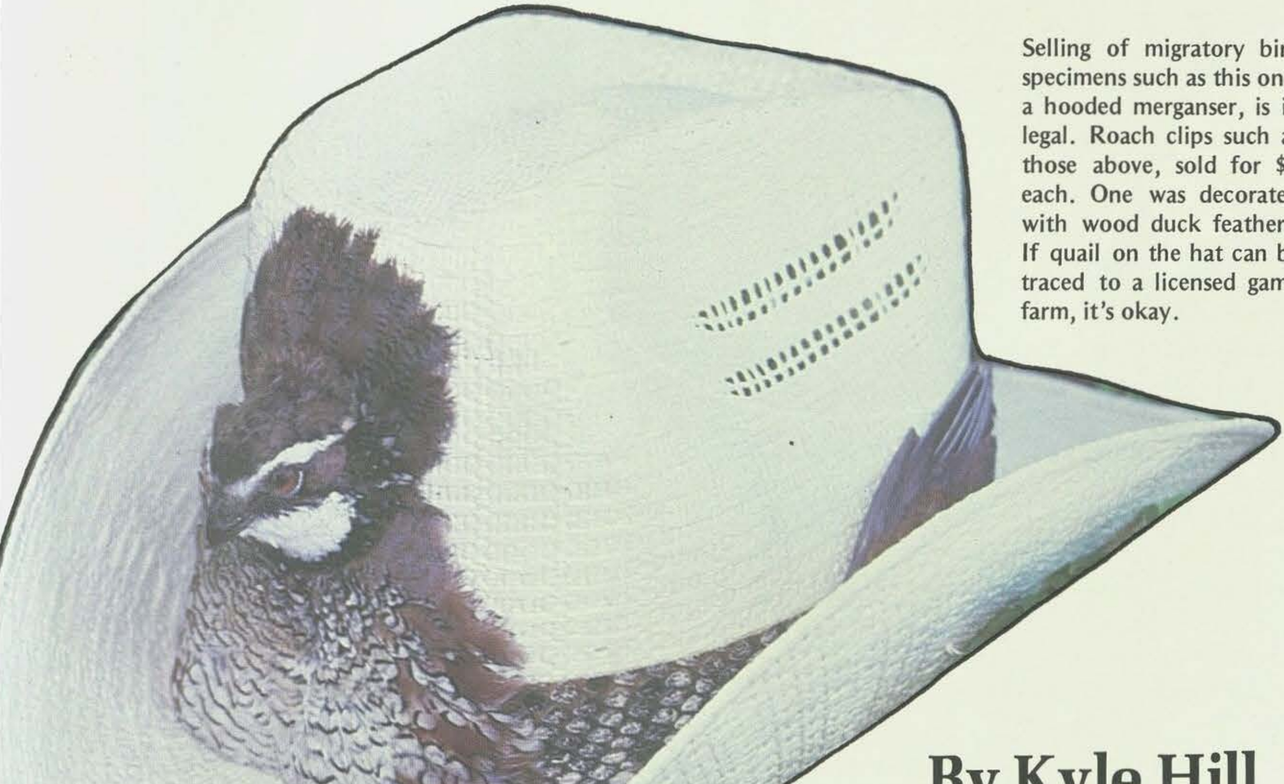
In recognition of the legitimate use of feathers in religious ceremonials of native American tribesmen, the U.S. Fish and Wildlife Service maintains a repository from which such items as eagle feathers, owl wings and other such objects may be drawn. Com-





Photos by Barry Cook

Selling of migratory bird specimens such as this one, a hooded merganser, is illegal. Roach clips such as those above, sold for $2 each. One was decorated with wood duck feathers. If quail on the hat can be traced to a licensed game farm, it's okay.



By Kyle Hill

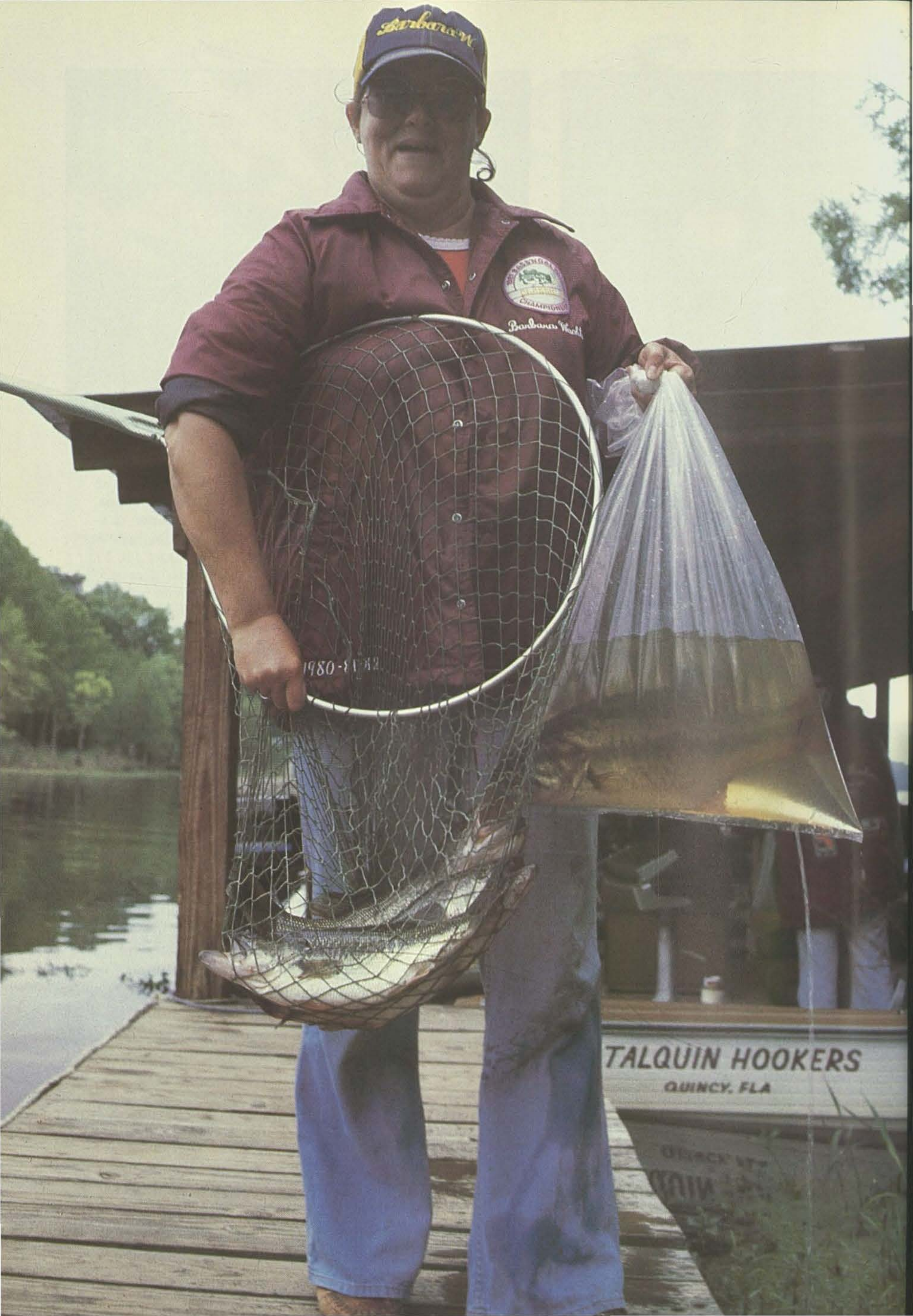
Captain, Division of Law Enforcement

mercial use of such items is forbidden, however.

Permits are available to educational and research institutions to maintain collections of bird specimens. If you should come upon a dead hawk, owl or other bird you believe might be of interest to such an institution, contact them about picking up the bird. It is not advisable for you to actually possess the bird yourself because this places you in technical violation.

Permits are not issued to private individuals to mount migratory nongame birds for personal use.

For additional information regarding possession of migratory birds, contact your regional Game and Fresh Water Fish Commission office. ☐


TALQUIN HOOKERS
QUINCY, FLA

Talquin Hookers

It hadn't been a particularly pretty day. The skies darkened more than once, driving the waves on the lake into a nasty state. Clothes donned before dawn are now heavy and just a bit damp. Other rod-and-reelers not quite so committed have long since headed in, but at least seven boats have stuck it out.

Starting at first light they have crisscrossed the lake, searching for that perfect spot, that "honey hole" as some call it. Cast after cast has been made and shoulder muscles are sore. When the rains came, shelter was sought if such was possible from the driving wet. Still the boats stayed out.

But the clock is ticking off the final minutes to four. That "one last cast" has been made. It is time to stop. Engines roar, waves part and the boats turn home.

Then, silently, smoothly, they enter the marina. Excited calls back and forth from boat to shore fill the air as luck, good and bad, is shared. Soon will be the moment of truth as the weigh-in awaits.

The results are good. Most all caught at least one elusive largemouth bass. A few caught several. Points are added here for live fish, now being put back into the waters for another day. A quick conference by the scales as the last fish are weighed and then the announcement, the cheers, the applause and the smiling winners.

Another bass tournament on a Florida freshwater lake has come to an end. It's a scene repeated regularly year-round. Yet to the casual observer, something seems different. Aren't those women weighing in? Indeed they are.

By Trisha Spillan

Photos by William Greer

Barbara Wachter's 10 pound 13 ounce catch, left, gave her a second place in this tournament. Braving the elements, below, Valerie McCarty and Francine Jacobs sought the elusive largemouth in the pads.

TALQUIN HOOKERS

They are the Talquin Hookers, one of a growing number of bass clubs comprised of women anglers. This has been just one of a series of weekend tournaments conducted by the club on its home ground, Lake Talquin, west of Tallahassee.

Headquartered out of Wachter's Lake Talquin Lodge, the club starts its season of tournament fishing in February and continues into November. Along the way, members collect points for year-end awards and hone their fishing skills.

Some of the members have honed them pretty well. Competing in last year's National Bass n' Gals tournament, the Talquin Hookers captured the team championship and the $10,000 first prize.

And, they will be back to defend their title against other Bass n' Gal chapters from across the country in this year's tournament. In addition, individual members have gone on to compete in bass tournaments across the Southeast.

Ginger Albritton, president of the Hookers, explained that the club is open to any woman, 18 or older, who is seriously interested in bass fishing. There is a cap of 30 members and a current roster of 22.

Almost all the members are married, not surprisingly to bass fishermen. The support they receive from their husbands is evident by the cheers and hugs at weigh-in. To these couples, bass fishing is a true family sport.

"It's interesting to see the evolution that has taken place," said Les Wachter, whose wife and daughter are members. "I have seen it go from 'my' boat, to 'our' boat to 'her' boat. But I'm not complaining. I think it's great."

Wachter's wife, Barbara, and daughter, Christi Dreher, are two dedicated anglers. Last year they were the first mother-daughter team to compete in the Bass n' Gals Classic World Championship.

Competition among the women is strong but also friendly. There is a certain comradery evident, with each willing to share with another. Since not all members have boats, those who do are paired in a random drawing with the boatless. And neophytes are urged to come out and participate.

A recent government survey showed that, of the 65 million fishermen in the country, some 21 million are women. As this trend shows no sign of reversing, organizations like the Talquin Hookers will become more common throughout the state.

Now for the $64 question—who decides who gets the boat on weekends? ☐

The moment of truth. From left, Libby Shepard and Valerie McCarty verify catch of Sarah Johnson who captured second. D.G. Martin, back to camera, looks on. Ginger Albritton, not shown, won first.

William Greer

The FLORIDA PANTHER

By Morrie Naggiar

Chris Belden

By an overwhelming majority, the schoolchildren of the state named the Florida panther as their choice for the state animal. The mandate was recognized when, on March 19, 1982, Governor Bob Graham signed the bill that made it official: the panther is now the state animal of Florida.

What is this creature that has so captivated the imagination of Florida youngsters that it could win out over such highly touted competition as the manatee and the alligator?

A large-sized member of the cat family, *Felidae*, the panther, *Felis concolor*, once ranged over much of the United States north into Canada and southward through Mexico, Central and South America to Patagonia. Some 30 subspecies are recognized. Among the local names that have been applied to the panther are mountain lion, catamount, cougar, painter, and puma. The species no longer occurs in most of the eastern United States and has been eliminated or greatly reduced in many other parts of its former range in this country.

The Florida panther belongs to the subspecies *coryi*. In earlier years it was quite widely distributed in the southeastern United States. Now, however, it is confined to a portion of the lower peninsula of Florida, in remote parts of Collier, Broward, Dade and Monroe counties. It is described as a medium-sized, relatively dark panther with short and rather stiff pelage. In comparison with other subspecies, it has noticeably long legs and small feet.

Considered characteristic of this subspecies are three distinct physical features. First is the tail which has a right angle bend in the last vertebra, giving a distinctive kink to the end of the appendage. Second is a whorl of hair—a "cowlick"—in the middle of the back. Third is the irregular white flecking on the head, neck and shoulders. This spotting has been noted in other subspecies but is much more prevalent in the Florida panther.

A mature male Florida panther weighs from 100 to 130 pounds, measures nearly seven feet from nose to tip of the tail, and has a height at the shoulder of from 24 to 28 inches. The female is somewhat smaller, from 60 to 80 pounds, and measures about six feet from tip to tip.

As are other cats, the panther is a meat eater. The white-tailed deer is the mainstay of its diet, although hogs and a variety of other animals may be taken.

It appears that the Florida panther is a relatively long-lived animal in the wild; however, there is little data available on the matter. Using tooth wear as an indicator of age, the oldest specimens of the 11 animals thus far handled by Game and Fresh Water Fish Commission biologists were estimated to be 12 years old.

Their mating season is January and February and males and females travel together only at this time. The female produces a litter of two to four kittens every other year. The gestation period is approximately 90 days.

Due to concern over the plight of the panther in

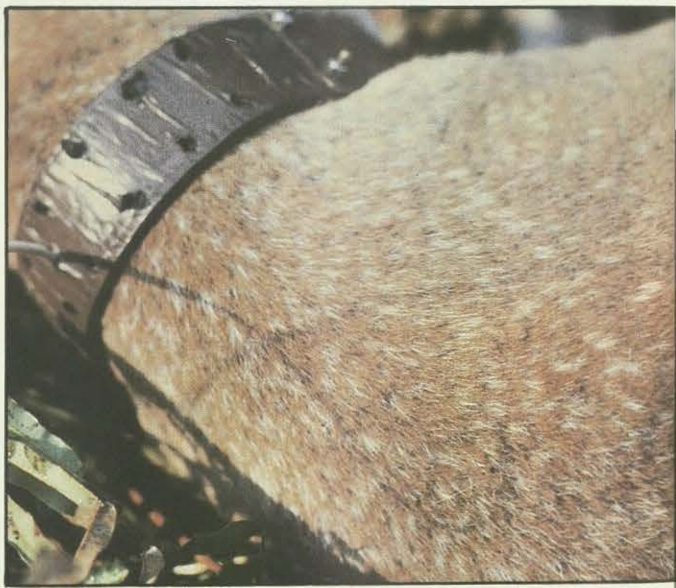
Florida, the U.S. Fish and Wildlife Service established a Florida panther recovery team in mid-1976. Team members represent both state and federal agencies as well as privately endowed conservation groups. Robert C. "Chris" Belden, a biologist with the Commission, was appointed team leader. The responsibility of the team was to prepare a recovery plan with the goals of preventing the extinction of the panther and reestablishing the population of the subspecies in as much of the former range as feasible.

The first problem in attaining these goals was to obtain information on the current status and distribution of the animal. The Commission set about that task in 1976 by initiating field searches for recognizable sign such as tracks, scats, scrapes, and kills. A Florida panther record clearinghouse was established to receive and screen panther sighting reports to eliminate those that were unlikely and to ensure investigation of all those reports that seemed to offer promise.

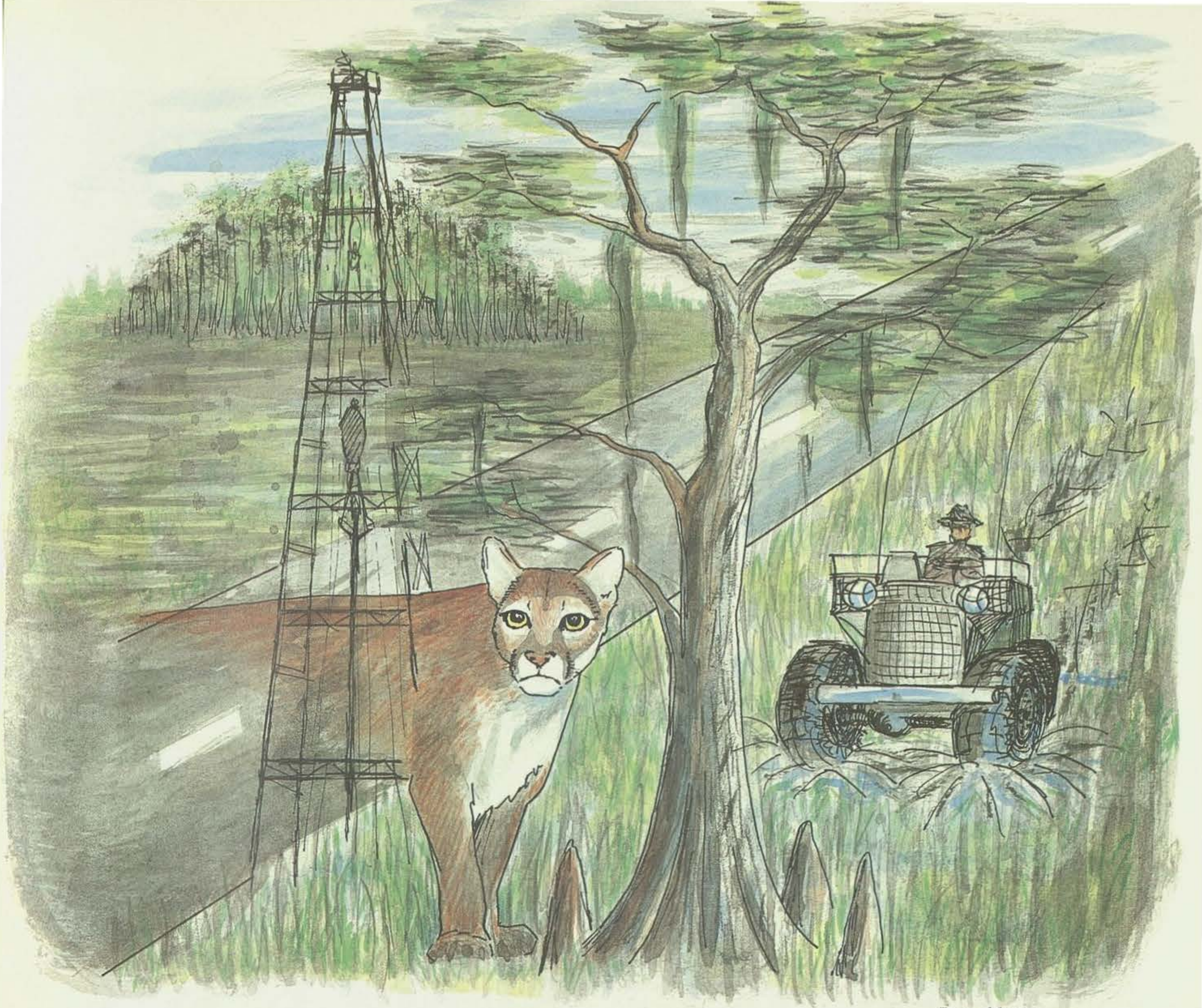
Thus far more than 1,600 reports have been received by the clearinghouse from all parts of the state. Reports of sign that have been confirmed have all been from the Big Cypress-Everglades region of southern Florida. In most cases, the tracks and other sign reported turned out to be those of dogs, bobcats, bears, and even raccoons and other seemingly unlikely candidates.

The panther is such an elusive and secretive animal that it is seldom seen even when diligently sought. Belden worked four years in the south Florida panther range without catching so much as a glimpse of one, although regularly finding sign of the animal. He and the other project workers had their first look at the subject of their research when Roy McBride, a professional panther hunter from Texas, and his dogs were employed to help with the capture of study panthers. The capture of the first two animals was described in the May-June 1981 issue of *Florida Wildlife.* Those and five others taken since have been fitted with radio-equipped collars prior to release to enable biologists to study their movements and behavior without disturbing the animals.

The telemetry phase of the program has revealed a great deal of information that could hardly have been gained in any other way. Each panther's collar-mounted radio transmitter sends out a signal on a different radio frequency so individual animals can be identified. A light airplane is used to fly the panther country, picking up the radio signals which are then plotted on a map. This is done several times each day and from 14 to 18 days each month. The result is an accurate plotting of each animal's range and its movements by season, as well as the information on how these animals interact with one another.



Photos by Chris Belden



Dave Maehr

The most noticeable physical characteristics of the Florida panther are shown on the facing page. These are, counterclockwise from top: irregular white flecking on head, neck and shoulders; cowlick in the middle of the back; distinctive kink in the end of the tail. High-speed highways, oil development and unrestricted recreational use of its habitat pose potential threat to the continued well-being of the Florida panther.

Some facts that have emerged thus far show that a panther requires some 40-150 square miles of territory; females appear to occupy smaller territories than males; and animals in the more open country of the Raccoon Point area of the Big Cypress appear to occupy a larger range than those living in heavier cover. An individual may travel from 15 to 20 miles in a 24-hour period, or sometimes remain a week or more in one relatively small area. Portions of some panther territories overlap, but it is seldom that two panthers are observed together other than during the breeding season.

The Florida panther is a capable swimmer, readily crossing canals and sloughs and ranging far out into the watery vastness of the 'glades. Even during periods of high water it apparently is little inconvenienced, sloshing about its usual range rather than seeking higher ground as do deer and other wildlife.

Obtaining such basic information is vital in formulating a workable management plan to prevent the extinction of the Florida panther. Based on the information we now have, Belden estimates that there are about 20 Florida panthers remaining in the state. "This may sound like an insignificant number," Belden explained, "but it appears to represent a viable population that probably is close to what the available habitat will support." There simply is not much habitat remaining that is suitable for this big cat.

With a population of this size, any mortality is of greater significance than it would be in the case of a more populous species. With State Highway 84 (Alligator Alley) cutting from east to west across the remaining panther habitat and State Highway 29 running north and south through the area, the potential for road kills alone poses a threat to the continued well-being of the species. It should be noted that during one recent 18-month period, three panthers were killed by motor vehicles. One of the animals was a female carrying four fetuses. It is possible that other such losses have gone undetected or were unreported.

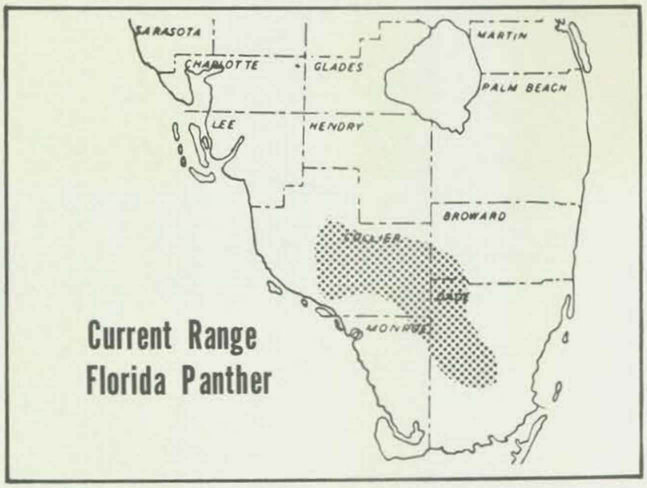
Making this a matter of considerable urgency is the fact that plans have been made to widen both Alligator Alley and State Highway 29. Unless special measures are included in the planned design for upgrading both these highways, the incidence of panthers being killed by motor vehicles may increase. Several of the radio-tagged animals currently under study often cross these roadways.

Deterioration of the quality of its remaining habitat is the major threat to the continued existence of the Florida panther. Portions of the 570,000-acre Big Cypress Preserve that are inhabited by panthers represent the wildest, least accessible wilderness remaining in south Florida. Although the surface area of the preserve is publicly owned, it is important to note that the mineral rights remain in private ownership. Substantial quantities of oil appear to underlie these lands. It is possible to tap this valuable natural resource without extirpating the panther in the process, but it will require sensitive, carefully controlled, cooperative action to do so.

The very wildness of the area also poses a threat to its preservation because its pristine beauty is a lure to many recreationists to see and experience. Aldo Leopold, recognized as the father of modern wildlife management, on this matter said, "Conservation of wilderness is self-defeating, for to cherish we must see and fondle, and when enough have seen and fondled, there is no wilderness left to cherish." Public support is an essential element in preservation of land resources, and use by the public was an important consideration in the purchase of the Big Cypress Preserve. It is essential, however, to recognize that the levels of all types of use must be compatible with other values of the land and controlled accordingly.

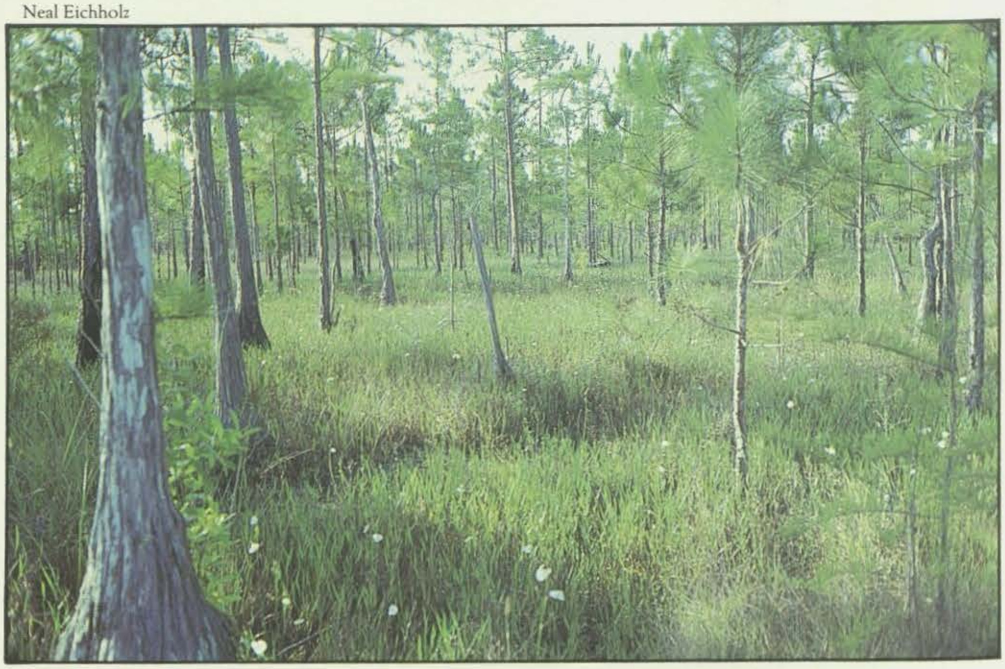
The panther, like many other wildlife species, can tolerate some human activity in its range. Being a secretive animal, however, there are definite limits to the amount of human contact with which it can successfully cope. Until we have a much better understanding of the animal, its needs and its relationship to man, history dictates caution in any decisions that may affect the panther and the wildlands in which it lives. The panther is a wilderness species and, if we lose its wilderness, we'll lose the panther.

Saving the state animal will be no easy task but most Floridians feel it will be well worthwhile to be able to say the Florida panther *is* rather than it *was*. ☐



Current Range
Florida Panther

Neal Eichholz



A view of Florida panther habitat in the Big Cypress area.

**The
FLORIDA
PANTHER**

Perfect hits on a paper buck.

Morrie Naggiar

Getting Ready

for the archery season • By Morrie Naggiar

It was peaceful in the woods—hot and quiet except for the drone of insects and the distant twittering of a small bird high in the leafy canopy. The forest floor, drenched by an earlier thunder shower, was quiet walking.

It appeared suddenly—a dark, bulky form screened by intervening bushes. The hunter eased a bit to the right and found an opening in the vegetation. The object, no longer screened by brush, evolved into a hog, a big one, black as coal and standing broadside.

The hunter brought up his bow and, with a fluid motion, pulled the arrow back to full draw. He held for an instant, then released. The string made a muted *twang* as the shaft flicked through the opening in the trees. It struck home with a solid *thawop*.

"Good shot," exclaimed one of the trio of archers who stood watching. "A solid ten," added another. Each of the three loosed an arrow in turn at the target, trying for a hit in the high-scoring "kill" zone. The four shooters pulled their arrows, recorded their scores and moved on down the trail to the next station.

This was obviously no real hunt but, as I was to discover in the next couple of hours, a pretty fair facsimile.

The occasion was a field archery meet between two clubs of north Florida bow and arrow enthusiasts, the Taylor County Bowhunters and the host organization, the Tallahassee Bowhunters Association. By day's end, the Tallahassee group had come out with the top team score to win the circulating trophy it had previously lost to the Taylor County group.

There didn't seem to be all that much fierce competition. "Fun is the name of the game in our brand of archery," says Jim Cooper, an active member of

Getting Ready

the Tallahassee club who introduced me to the range. His sentiments were seconded enthusiastically by several other members. Low key competition between clubs is part of the fun, they told me, not to slight the fellowship you enjoy getting together in an interesting activity with others who have a mutual interest.

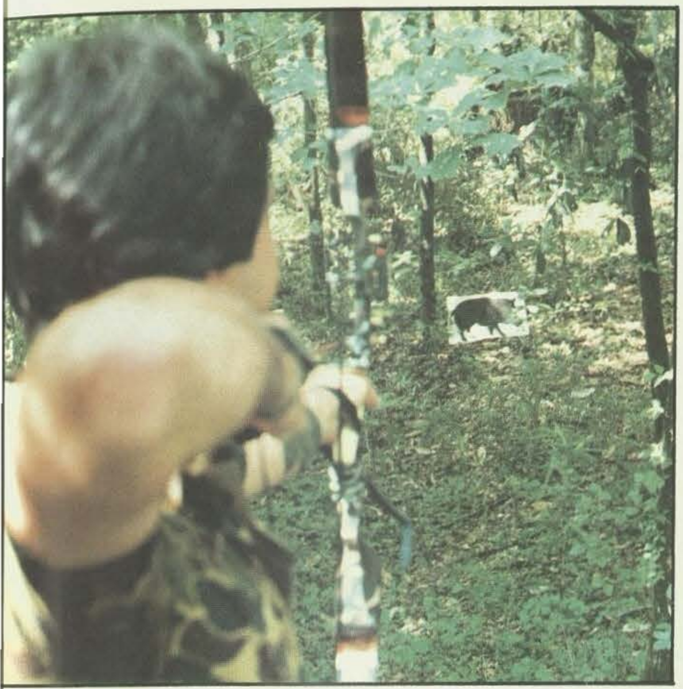
Most of the club members are active hunters who, come fall, take to the field in hopes of a deer, hog, turkey or other game. Preparations for this type of hunting are built into the field archery course.

The Tallahassee club range, for example, is set up in a patch of beautiful, typical north Florida hammock land. There are 40 targets spotted along a trail winding through the woods. The game represented varies from a rabbit to a big, heavy-antlered bull elk, with deer, hogs, turkey and woodchuck in between.

A stake is located somewhere between two points, one to the left, one to the right out at shooting range (between 10 and 50 yards) in front of each target. The shooter must be touching the stake with some part of his body while making the shot. He may have to kneel, sit, stand erect or bend at an angle to get a clear shot. The shooting point stakes may be moved before each meet so any "home ground" advantage to the host club is minimized.

Shooters are grouped into teams of four. It will take a team about two hours to complete a round of the 40 targets, each archer getting one shot at each target.

The shots vary in distance, size of target and the most appropriate shooting position, just as in regular game hunting. You may find one close shot with little undergrowth to interfere with the flight of the arrow. The next may require kneeling or bending forward to get a clear shot or it may be that a sitting shot from one of the three tree stands on the course is called



Jo Kinsley and friends warm up on sighting-in range before contest, left. Tommy Lett, above , draws on target from tree stand. Tallahassee club president Guy Love, right, and Taylor County archer watch, in photo below, as David Gibson posts scores.

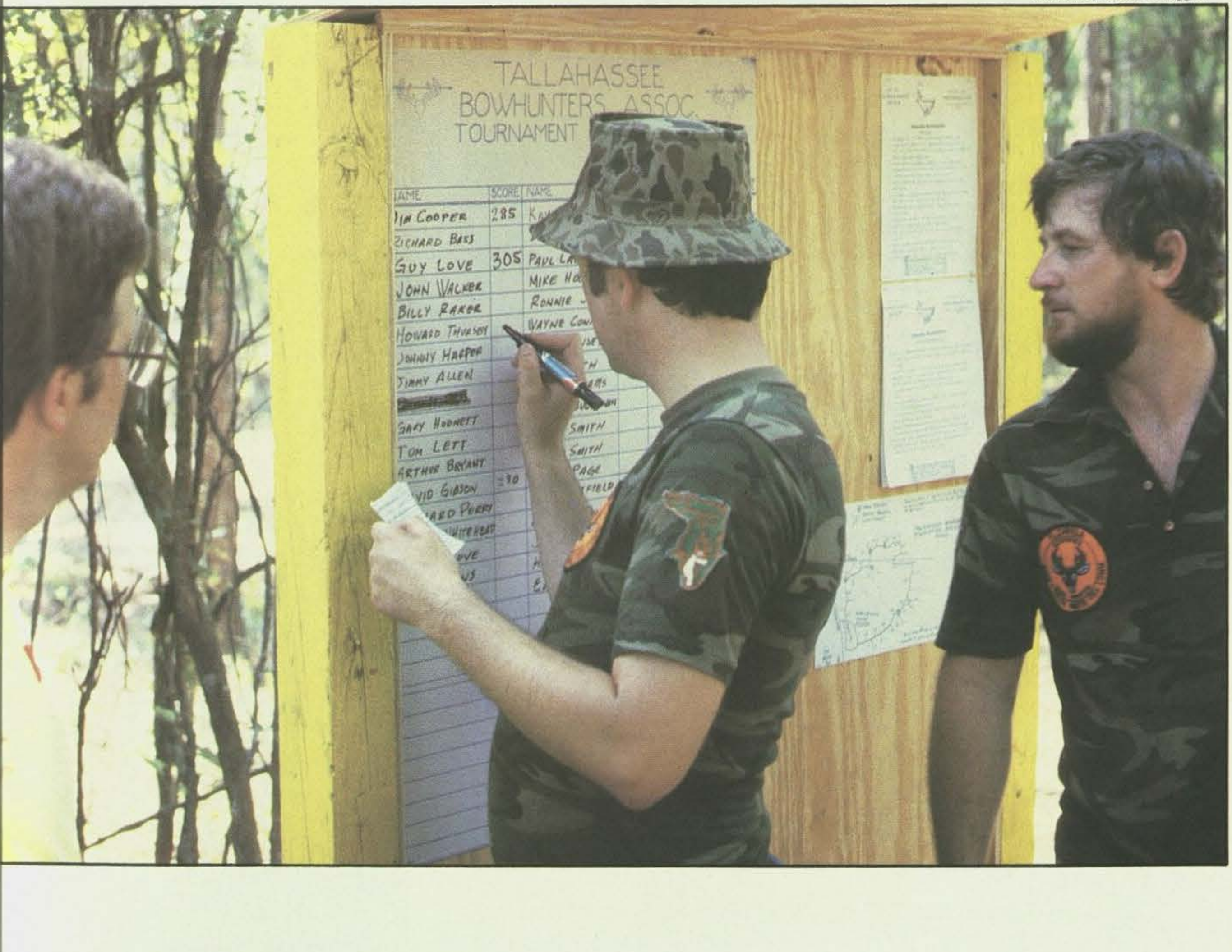
for. By the time a shooter has completed around of 40 targets, he's been exposed to a fair representation of the shots he's most likely to encounter in practically any hunting situation.

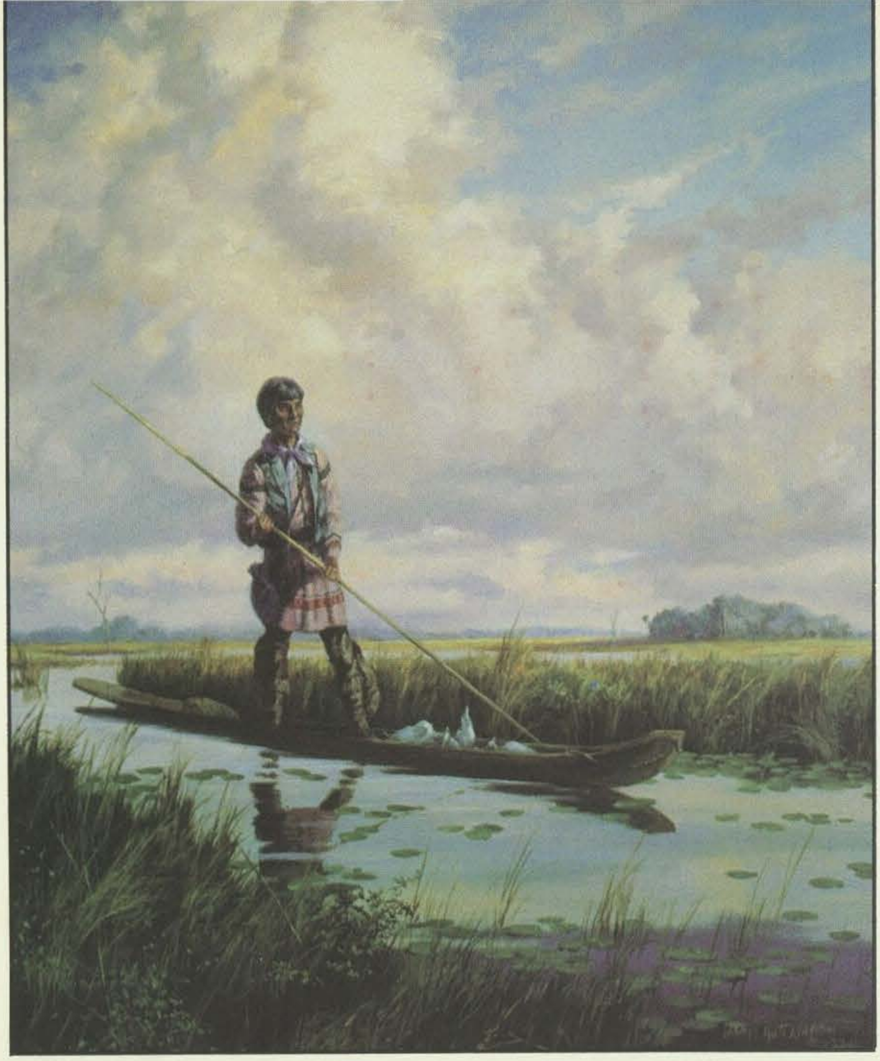
Most any afternoon at the club range just west of Tallahassee, you're likely to encounter at least a few members. They may be shooting at the sighting in targets or making the rounds of the field course. In archery, attention to the fine points of technique is all important and constant practice pays off whether in competitive shooting against another club, with your friends or on the trail of game.

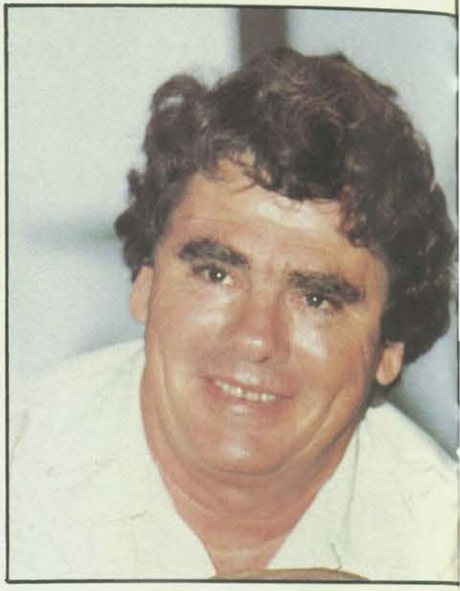
For sure, every bit of practice puts you that much closer to being prepared for making a successful shot when that long-sought hatrack buck, or even a junior edition of old mossy horn, steps into view.

But whether it's game or a hay bale-backed target you're drawing your bow on, trying to make that arrow go exactly where you're looking is an exciting challenge. ☐

Photos by Morrie Naggiar







To 15-year-old James Hutchinson, the North Fork of the St. Lucie River country in 1946 was the most beautiful area in all of Florida. The Hutchinsons, Jim and his father, lived a somewhat primitive life there, foraging from the river and the surrounding countryside. He says of the period, "My father was a philosopher and part-time house painter, so there was little money. But none of the families we knew had money. We traded in other things: the gladness in seeing one another, born of people who live a distance apart with few opportunities to visit, and a genuine love of the place where we lived."

Hutchinson made it through Martin County High School plus two years at Florida State University where he met Joan Austin, his wife-to-be. A stint in the Navy and a period at The School of Illustration and Cartooning in New York followed.

"Then we were married and settled down in an old

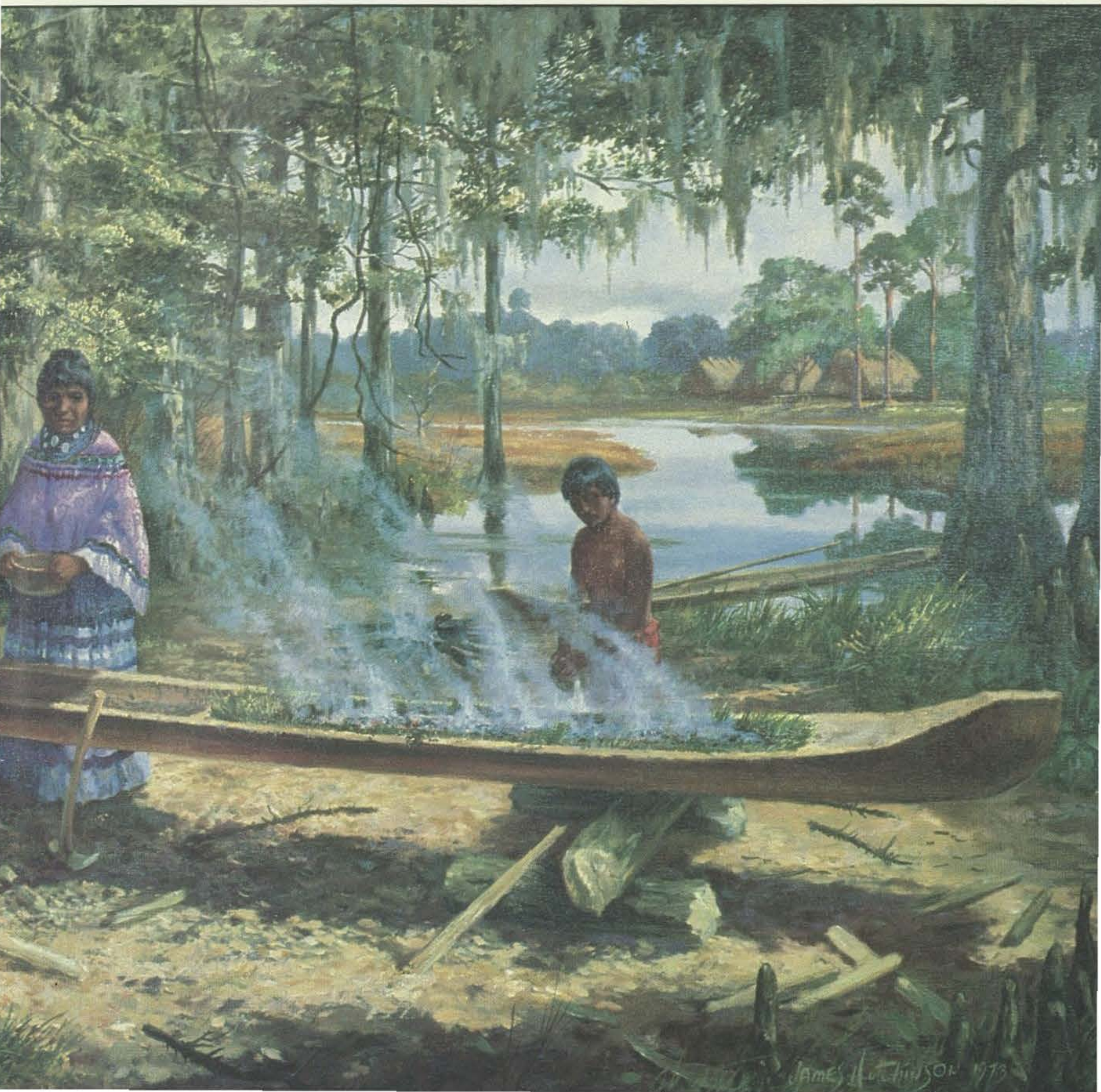
PLUME HUNTER—Feathers for fashion's demands brought money to Glades Indians around the turn of the century. CANOE BUILDING—This was a tedious process, demanding great skill to shape and hollow a cypress log.

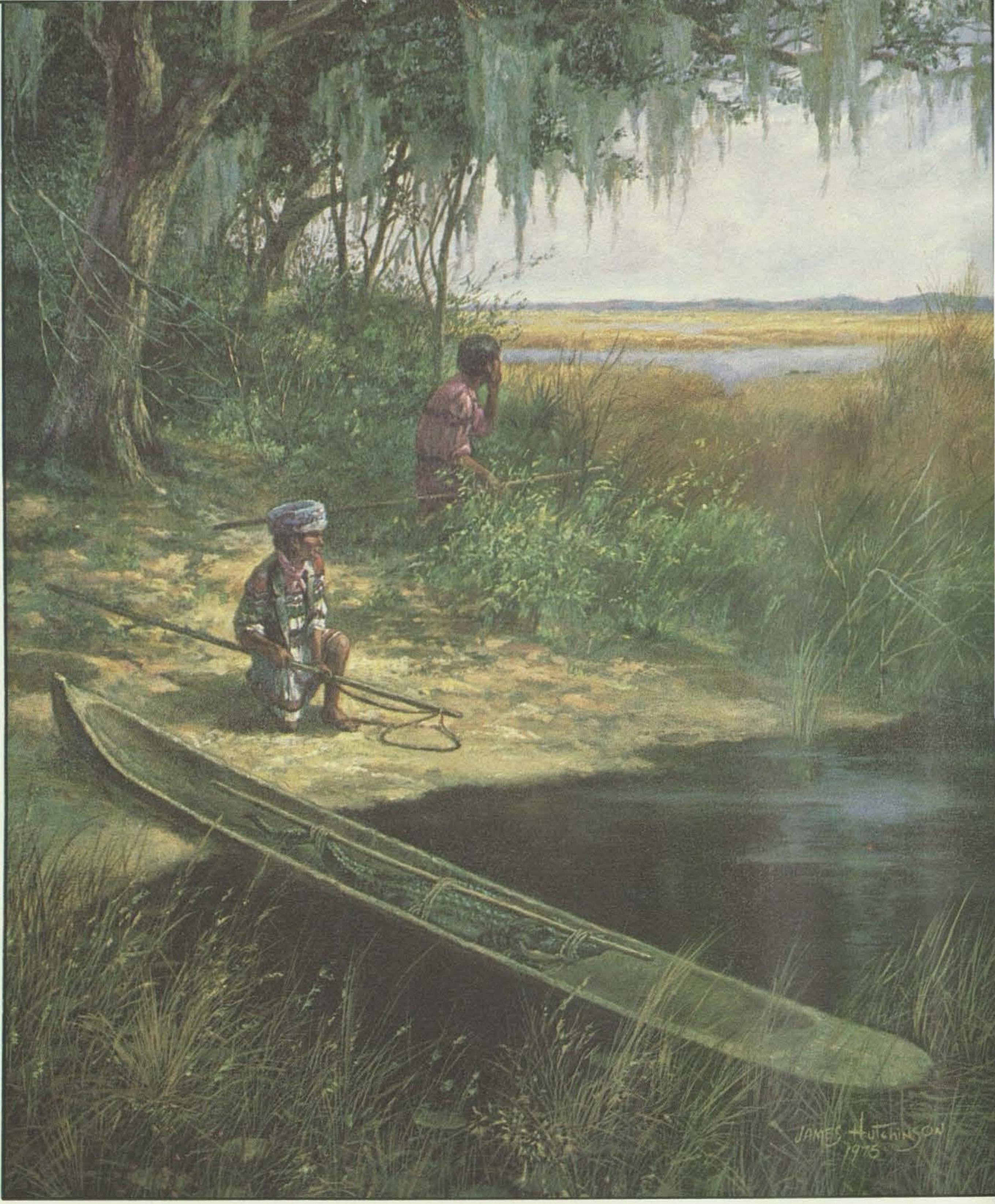
History and art come together superbly in the paintings of Seminole Indians by James Hutchinson

By Morrie Naggiar

loft in the Stuart area and proceeded to quietly starve," says Hutchinson. For the next eight years they lived a true Bohemian artist's existence. He took on whatever kind of work chance threw his way—house painting, stump grubbing, sign painting, insurance selling and, of course, continued with his art.

A chance discussion one evening with another couple, fellow artists and curators of a local museum,





ALLIGATOR LOVE CALL - By imitating call, hunters hope to entice alligator into range of snare pole. WASH DAY - On the Brighton reservation, until the mid 1960s, laundry was done in a pond near the chickee. EAR DOGS - Dogs are used to trail and catch wild pigs. They seize pig's ear, forcing animal to the ground. Encounters are bloody and dogs frequently are killed.

brought up the idea of preserving in a series of paintings, the way of life of the Seminole and Miccosukee people. There followed a trip to Washington, D.C., to discuss the matter with Smithsonian Institute officials. They were enthusiastic over the project.

Now that he had the tacit approval of his peers,

James Hutchinson

Hutchinson admitted to having some qualms regarding the situation, thinking perhaps he was being presumptuous in trying to impose himself on the Indians. Nevertheless, the Hutchinsons applied to the Tribal Council. They received permission not only to visit, but to actually live on all three reservations. They were the first non-Indians so privileged.

After the first year, during which most of the reservation people came to trust them, Hutchinson began to develop an understanding of what was involved in his undertaking. The couple found themselves completely captivated by a culture that was entirely new to them.

"We went native," says Jim. "Our camp was a

James Hutchinson

copy of the Indian camp, except that we slept in a tent instead of the thatched chickee." They cooked over an open fire, bathed in a pond and became accustomed to smelling of oak smoke. "Joan wore the Seminole full skirts and was often mistaken for an Indian. With my Irish nose and complexion, no one made that mistake with me."

As a result of his work on the reservation, the Hutchinsons were in demand for lecture tours and exhibits all over the state. Some 30 Hutchinson canvases were hung in the Florida Pavillion at the 1965 World's Fair in New York. Some of these were displayed later at the Berlin Festival in Germany.

Hutchinson's feeling for the natural wonderland of the lower peninsula shows through in his work as does his deep involvement in studies of the Seminole and Miccosukee cultures. Meticulous attention to

detail and historical accuracy mark his efforts.

The artist soon began to receive commissions for historical paintings. The result, in turn, was a grant from the Arthur Vining Davis Foundation, with matching funds provided by private individuals, to paint a collection of 50 canvases depicting the history of the Seminoles and Miccosukees. The paintings presented here were among those displayed earlier this year at the Florida Museum of History in Tallahassee. Completion of the project is expected to take about five years. The collection is slated to be housed at the University of Miami. □

GLADES AFIRE - Seminole family packs up belongings to move out of path of flames. Artist witnessed this scene in 1959 east of Immokalee. POACHERS - Poaching on lands assigned to the Indians was one of the actions that created hostility between the tribesmen and early settlers. INDIAN CABINS - Long before the appearance of the chickee, Seminoles lived in log cabins such as those in painting below.

Photos of Hutchinson paintings by William Greer

Chassahowitzka

It must have been like this a thousand years ago. The artesian springs must have poured their millions of gallons of fresh, sparkling water through the river's shallow channel each day to join and dilute the saline waters of the Gulf of Mexico to create the liquor of estuarial life.

The sun must have shone over waving acres of marsh grass. The wind must have rippled the broad expanses of shallow green water, dotted here and there with outlying islands.

And the blue-white rays of moonglow on spring nights must have showered the mangrove thickets to throw into stark contrast the whites, blacks and browns of the fluttering, chattering thousands of nervous colonial birds at nest.

Only the signs and the miles-long lines of weathered posts, sunk into the sands of the bays to mark man's boundaries, were missing those many years ago. Today, they and the channel markers that define the path from bay to river's mouth are about the only enduring evidence of the presence of modern man.

And that is as it should be, for this is the territory of a national wildlife refuge, preserved from the permanent predations of man for the benefit of wild things.

For the moment, man is allowed to come and go on the waters of the rivers and bays. He harvests oysters and ducks in season; he nets black mullet; he fishes for spotted sea trout, redfish and tarpon; he trawls shrimp and traps crabs. But his passage is unmarked and unremarkable, his modern activities are less permanent in their impact on the environ-

Russ Fee

Fishing in the tidal waters is important recreational activity, above. The area is also much used by a variety of birdlife, such as great blue heron, right.

NATIONAL WILDLIFE REFUGE • By Russ Fee

ment than those of the Timucuan and Seminole Indians who preceded him and whose presence is evident today only in a few remaining shell-laden trash heaps (middens) and factory mounds.

The multiple-use public facility that is the Chassahowitzka National Wildlife Refuge was created in 1943 primarily to preserve one of the most southerly and historic wintering areas for ducks and coots migrating along the Atlantic Flyway. It retains that objective nearly 40 years later with several thousands of these wild fowl using the preserve each year. However, in the interim, it has become nearly as important as a major feeding and nesting area for colonial marsh and water birds, and as the winter home of the most southern flock of pintail ducks.

Most recently it has been identified as a summering place for individuals from the Crystal and Homosassa River manatee herds and has been designated a manatee sanctuary from May through August when the endangered mammals are in residence.

However, the birds are the focus of attention for the five members of the U.S. Fish and Wildlife Service and the U.S. Department of the Interior who comprise the refuge management team. Headed by Ed Collinsworth, who oversees three national refuges, the team includes Stuart Marcus, assistant manager of the Chassahowitzka refuge; Jerre Gamble, assistant manager of the Cedar Key and Lower Suwannee national wildlife refuges; Bob Quarles, maintenance technician and Esther Brown, secretary. The team's headquarters is located about five

Russ Fee

Chassahowitzka

miles south of Homosassa Springs on the west side of U.S. Highway 19.

Because the refuges are multiple-use facilities, this management team engages in a broad spectrum of duties ranging from the traditional censusing of animal and plant populations, controlled burning to improve habitat and food sources, tour guiding (and other public relations activities), erecting nesting boxes, trapping and banding of waterfowl, planting of wildlife food and a variety of biological studies.

A major responsibility is the enforcement of legal hunting regulations on the Chassahowitzka refuge that, in the winter of 1981, saw 325 hunter days result in the harvest of 580 scaup (bluebill), widgeon, pintail, red-breasted merganser, mallard, ringneck, hooded merganser, canvasback, blue-winged teal, black duck, green-winged teal, gadwall, redhead and shoveler.

In addition to the wintering flocks of ducks and coots which originally justified the creation of the refuge, the Chassahowitzka (pronounced "Chassawitzka") has, as full-time residents, great and little blue herons; green herons; common, snowy and cattle egrets; black- and yellow-crowned night herons; white ibises; brown pelicans; ospreys and a small number of bald eagles. In fact, the refuge has been home, at one time or another, to more than 240 species of birds.

The lands that comprise the major portion of the non-aquatic acreage of the refuge include hardwood tree hammocks of palm, cedar, oak, cypress, bay, magnolia, holly, ash and elm that support a viable population of alligators, raccoons, minks and otters and an upland population of deer, turkey and bobcat. The waters of the two contiguous rivers, the Homosassa and the Chassahowitzka, and the brackish waters of the estuaries support a variety of food and game fish including largemouth bass, bluegill, sunfish, sheepshead, mangrove snapper, redfish, speckled sea trout, tarpon, ladyfish, small grouper, jack crevalle and black mullet, in addition to numerous forage species such as freshwater shiners and Atlantic needlefish.

In addition, the shallow waters of Chassahowitzka Bay have become famous for their world-class tarpon fly fishing. Tarpon taken there occupy three of the four flyrod record categories for the species maintained by the International Game Fish Association. Every May, local hotels, motels and rental housing in the Homosassa area fill with anglers intent on beating the world records which were broken on those same grounds the year before. For about six weeks, from the first week in May to the middle of June, such well-known anglers as Al Pflueger, Billie Pate, Dr. Leonard Berg and Tom Evans Jr., can be found on the Chassahowitzka flats. Anglers from Germany, France, England, Australia and Canada also regularly try their luck on these world-renowned tarpon grounds.

However, it is the spring nesting season of the colonial species of birds that provides the most obvious justification for existence of this refuge. Three years ago (spring 1979), the red, black and white mangrove islands that guard the mouth of the Chassahowitzka River were heavy with nesting birds, their plumage bright, even vivid, against the dark green of the mangroves.

Literally thousands of birds occupied every avail-

John Foster

Russ Fee

Scaup are among several thousand ducks that spend winter on refuge, opposite page. White ibis and great blue herons nest and roost in mangroves.

able roost on Saddle and Bird keys and spilled over into the mangroves of adjacent islands. They filled the air with their cries; they fluttered and craned and fought and slept amid a cacophony of sound and sight. Yet the pushing, crying, beaking and flying were all part of the process of food gathering, returning, query, recognition, delivery, eating, regurgitating and defending the nest.

Today, though the process continues on the islands of the Chassahowitzka refuge as relentlessly and inevitably as ever, the numbers and varieties of nesting birds have been reduced markedly. Now the predominant species is the cormorant with a sprinkling of ibises and herons.

The villain is the prolonged, near record freeze of the winter of 1979-80 that killed much of the mature white mangroves and severely damaged the red and black. The nesting habitat of the Chassahowitzka was altered to such an extent that the majority of the birds abandoned these traditional nesting grounds, it is presumed, for less severely damaged mangrove rookeries further south.

It was not the first time in the history of the Chassahowitzka refuge that weather extremes had altered natural patterns. Once a major nesting habitat of the brown pelican, a serious die-off of mature mangroves in the winter of 1962-63 deprived the huge birds of the leafy screens they desire for their nests. The pelicans were last observed nesting on the refuge in 1965, though they have continued to use the area as a feeding ground.

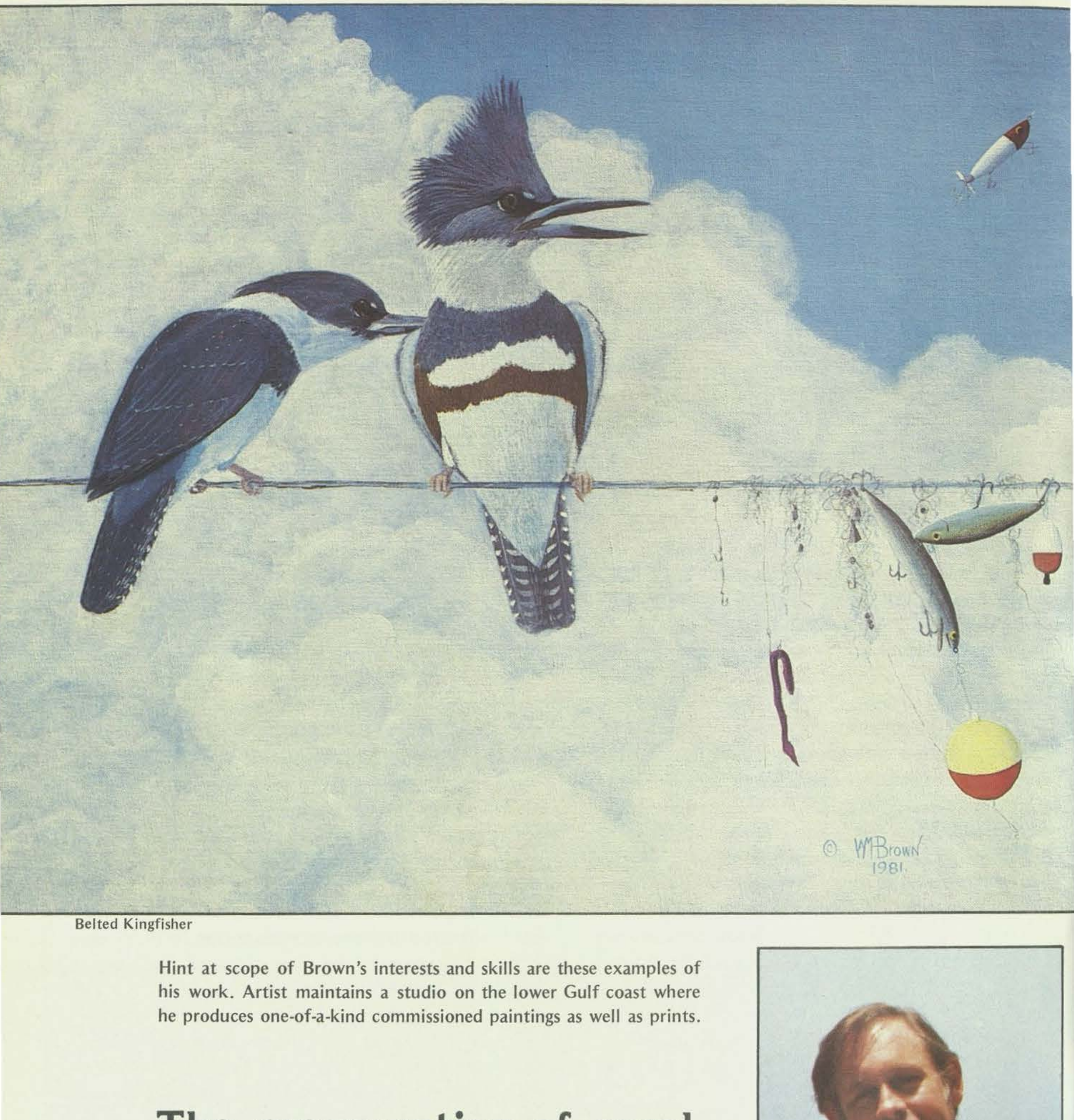
The major west-central Florida rookery for the endangered brown pelican, since the 1962-63 freeze, has been the Cedar Key National Wildlife Refuge. There, on 52-foot high Seahorse Key, the birds find a variety of freeze-resistant trees and bushes that are sufficiently strong and leafy to serve as protected and secure supports for them, their nests and their young. They can be found there in great numbers during the spring nesting season.

Nature, however, compensates for its ruthless moments with its healing processes. And so it is on the Chassahowitzka. Though mature mangroves have been irretrievably damaged, new growth developed rapidly throughout the mild winter just past and there is hope the rookeries will return to their former state—and the birds in all their variety to the rookeries—when the mangroves once again reach maturity.

There was some improvement in the variety of birds attracted to the refuge this spring. White ibises appear to have rejoined the egrets and cormorants along with a scattering of green herons and black-crowned night herons.

In the meantime, there is nothing man can do to accelerate the recovery process that nature has set in motion. It is a case of sit and wait and observe and count and hope that the abandonment of this west-central Florida rookery by the majority of the species that have traditionally nested there will not be permanent.

Still, life in the rookeries, in the estuarial waters and on the lands that constitute the Chassahowitzka National Wildlife Refuge will go on, it is hoped, in harmony with man, but in spite of him, if necessary. For that's the purpose and the legacy of the U.S. Fish and Wildlife Service and of its sister Florida state agencies, the Game and Fresh Water Fish Commission and the Department of Natural Resources, which collaborate with it in that objective. ☐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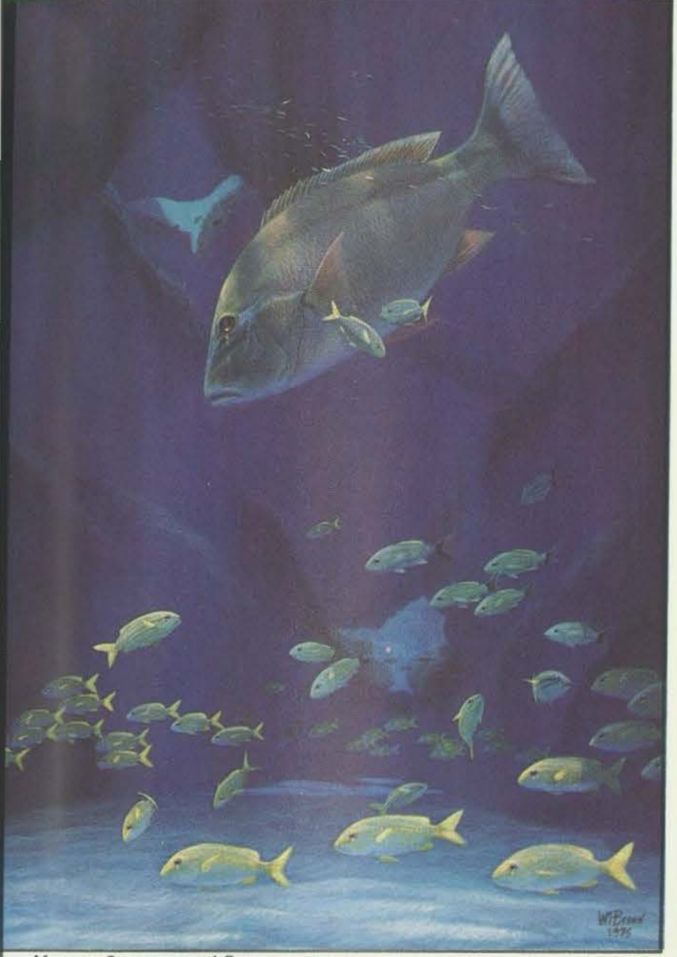
Belted Kingfisher

Hint at scope of Brown's interests and skills are these examples of his work. Artist maintains a studio on the lower Gulf coast where he produces one-of-a-kind commissioned paintings as well as prints.

The preservation of coral reefs and wilderness areas is the goal of Venice artist

BILL BROWN


Mutton Snapper and Prey

By Trisha Spillan

Bill Brown, a native Californian, now makes his home in Venice. He made his way to Florida from Puerto Rico where he was professionally active as a newspaper feature writer, underwater photographer (winning national and international awards) and Puerto Rico's first full-time professional skindiver (1957-70). During the time he spent in this Caribbean island, he was also curator of the first public sea aquarium there and was responsible for the environment of 3,000 acres of land and six miles of beaches at Palmas Del Mar, Puerto Rico's subsidiary of Sea Pines Plantation of Hilton Head Island, S.C.

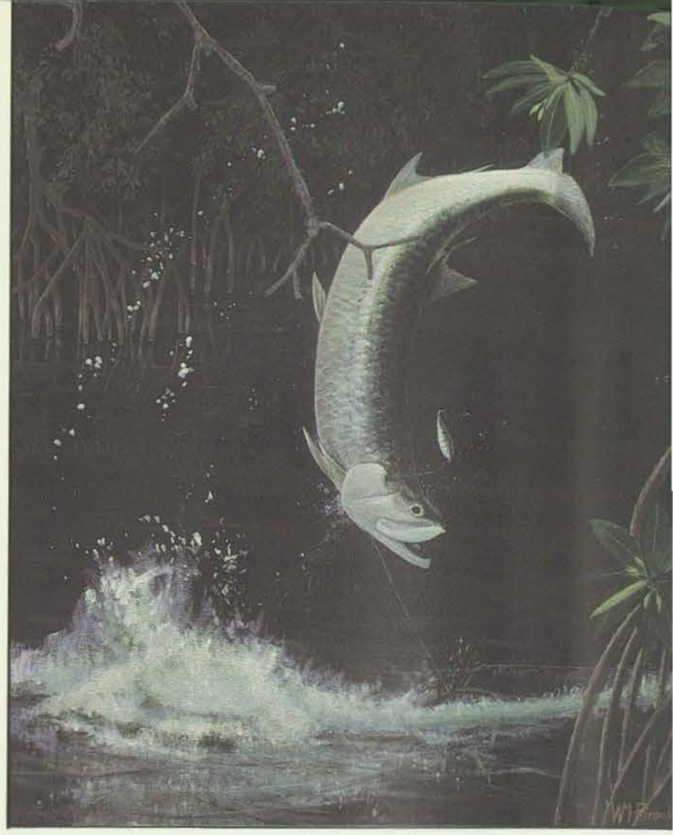
In 1970, he lived for a time in Costa Rica and was in the venomous snake business. He also has been a lecturer on marine environmental protection and has served on governmental advisory commissions reporting to the President of the United States.

For the past seven years, Brown has devoted his

Gulf in Summer with laughing gulls, shorebirds

BILL BROWN

time to painting, with the majority of his work wildlife art. In his own words, "In Florida, I want to paint canvases that communicate with those who feel as I do about the preservation of wilderness and coral reefs and, of course, the whole spectrum of wildlife. I want to fight for that preservation with my paintings. They are the best weapon I have developed, within my own limitations, to defend those delicate treasures that have survived, as communities in nature, for so incomprehensibly long before any man came this way." □



Rampaging tarpon throws plug in aerial display that sends spray flying, right. Turkey gobbler on roost, below, checks situation before flying down.

Hunter Education News

Evolution is a subtle process that is inescapable for the Florida hunter. As our hunting techniques evolve and become perfected, the effectiveness of the elevated tree stand fills an ever-increasing need in our attempts to successfully harvest the white-tailed deer and wild hog.

But alas, as with any investment, along with the assets come certain liabilities. Ever-increasing evidence exists that sportsmen are liable to injury while installing, entering and leaving their elevated stands, whether of the climbing or the ladder type.

Realization of this danger has prompted this author to create a set of guidelines that fellow outdoorsmen may follow, thereby reducing this personal risk.

First, let's take a look at why the tree stand is such an effective implement for harvesting wildlife. Deer and wild hog are of a physical stature preventing them from any major predatory threat from above. Therefore, they rarely have a need or desire to look up. The hunter is now above the deer's keen eyesight.

Secondly, thermal currents keep the odor of the hunter above the deer preventing successful use of the animal's keen sense of smell.

Thirdly, a footrest on a stand is much quieter than shifting your feet upon the leaf and twig-covered forest floor.

Take note at this time that once the outdoorsman is above the deer's normal line of sight, to continue to climb above this plane has an adverse effect upon visibility rather than enhancing it.

A stand 10 to 15 feet in height is normally adequate, and when you stand on the platform, you add another several feet to your shooting height. If you are too high, it may become hard to see and shoot through the lower limbs of your tree as well as the surrounding trees. Therefore, if you are just below most limbs, but above the game, your position is just about right and your visibility greatly improved.

Forsaking all other reasons, if you should fall asleep and not have a safety strap (which we will discuss in a moment) the higher the stand, the harder the fall.

One fatal case that comes to mind is a hunter with a heart condition who falls from a tree stand. Under similar circumstances, and being unable to break his or her fall, the resulting injury upon impact could be deadly. This danger is compounded for the bow hunter when the additional risk of falling upon a razor-sharp broadhead is added. To ascend or descend any tree stand with an unquivered broadhead is a subtle form of Russian roulette.

The following list of ten safety tips for tree stands are not meant to be absolute, but as a framework or basic safety rules upon which sportsmen may build a safe procedure to perpetuate their enjoyment of a quality hunting experience.

1. Maintain all tree stands in good mechanical condition.
2. Select your site carefully.
3. Make sure stand is firmly emplaced and secure.
4. Do not enter tree stands if you are fatigued. You will fall asleep.
5. Use a rope or strap around your waist and tie it to the tree in such a manner as not to restrict your movement, but so it will act as a safety line should you fall.
6. Utilize a line to lower and raise your unloaded firearm once you are in place and comfortable.
7. Check your firearm for barrel obstructions each time you raise or lower it.
8. Quiver all arrows when raising or lowering bows.
9. Always advise someone of the general location of your stand and when you will return.
10. Never attempt to utilize old tree stands you find in the woods, especially those that are nailed to trees (now against the law) and weathered gray.

By following these simple guidelines and adding additional ones of your own if you desire, you will not only improve the quality of your hunt, but also help guarantee your safe return. *—Lt. Bill Welbourne*

Gene Smith

The New Florida Buck Registry

By Dr. Allan Egbert

Assistant Director, Division of Wildlife

Beginning this fall, Florida deer hunters will have an opportunity to have antlered deer they take scored by Commission representatives. The new Florida Buck Registry is patterned after the Boone and Crockett Club's scoring system and replaces the Commission's Big Buck Club. The scoring system is designed to numerically reflect the overall size of deer antlers. Antler beam circumference, number of antler points and antler spread are some of the measurements that will be taken.

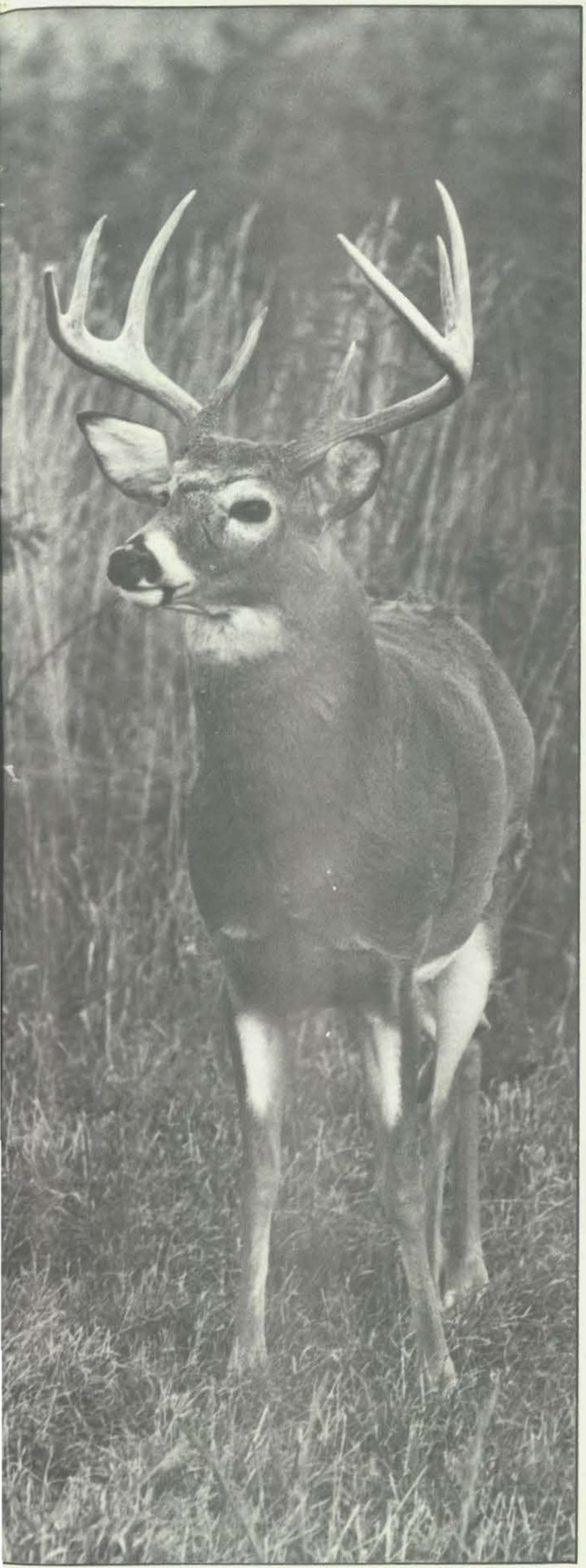
It is hoped the new registry will have more meaning to deer hunters than the discontinued Big Buck Club. The Boone and Crockett scoring system is known and understood by most hunters. A deer rack score of 140 under Boone and Crockett system is a big set of antlers for a Florida deer. The Big Buck Club, in contrast, documented only the number of antler points on the rack and the estimated weight of the animal.

It is no surprise to most hunters that Florida deer are generally smaller than their northern cousins because of Florida's less productive habitat conditions. To our knowledge, no Florida buck taken has ever scored the official Boone and Crockett minimum of 170 inches (or 195 inches for atypical antlers). However, we do know that Florida produces some fine deer and we want to document where they come from and just how many there are. We also want to afford some long overdue recognition to Florida hunters who have substantially contributed to wildlife management in this state.

We have another motive—to make more people

William Greer

A score of 140 under the Boone and Crockett system is a big set of antlers for a Florida deer. The minimum qualifying score is 100 for typical and 125 for atypical. If your deer's antlers meet or exceed the minimum standards, the score will be entered in the statewide buck registry. If short of the minimum, you will be informed how close your buck came.



Leonard Lee Rue III

aware of what kind of deer management it takes to produce bucks with fine antlers. Big-antlered bucks usually occupy well-managed deer habitat where there is a controlled harvest of does and small bucks. In addition, overharvest of mature (two and one-half years old and older) bucks is avoided if truly big bucks are to be produced. Landowners, lessees and others can give deer management assistance by contacting a wildlife biologist at the nearest Commission regional office.

The rules for getting your buck scored for the new Florida Buck Registry are simple. The minimum qualifying score is 100 Boone and Crockett inches for typical antlers and 125 inches for nontypical racks. Deer must be legally taken in Florida and animals taken in any previous year are eligible. If a deer's antlers meet or exceed minimum scoring standards, the score will be entered on the statewide buck registry. If the antlers are short of the minimum, we will let you know how close you came.

If you wish to have your deer antlers scored and entered on the Florida Buck Registry, contact the regional office of the Commission nearest you (toll-free telephone numbers of the offices are listed elsewhere in this magazine). Ask to be connected with the Wildlife Reserve Coordinator regarding the Florida Buck Registry. If the Wildlife Reserve Coordinator is not in, ask for his alternate or leave your telephone number and he will return your call. The Wildlife Reserve Coordinator will give you the name, address and telephone number of an approved scorer near you. You will then need to contact the scorer yourself and make arrangements to get together and have your trophy scored. In most cases, the scorer will request that you bring the antlers to him.

The official scorers of the Florida Buck Registry are members of the Commission's Wildlife Reserve. Wildlife reservists are dedicated and conscientious citizens who are so interested in conservation that they volunteer their time, services and frequently their funds to assist the Commission. Each reservist has been trained in conservation and law enforcement. He has also been instructed in the proper techniques for scoring your deer's antlers.

The Wildlife Reserve, in cooperation with the Commission's Division of Wildlife, is furnishing the manpower and funds to provide this service to deer hunters. We think you will find it informative and we believe it will also help us continue to improve our efforts in management of Florida's deer herd.■

William Greer

"The facts demonstrated that, while certain kinds of shotguns could encounter problems from firing steel shot --the majority of modern shotguns would be acceptable for using steel shot.

By Trisha Spillan

Steel Shot Report

"The expert testimony, which was not contradicted, is that lead poisoning is a significant problem in waterfowl in the United States."

Florida's steel shot regulation withstood a court challenge this year when, on June 2, a circuit court judge in Leon County declined to grant a permanent injunction against the Game and Fresh Water Fish Commission.

In a nine-page order, Judge John A. Rudd disagreed with the 15 Leon County waterfowl hunters who filed the action last December charging the steel shot law was discriminatory, unconstitutional and caused them undue hardships.

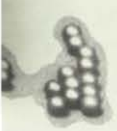
In making his decision, Rudd stated that the evidence "demonstrated that the problem of lead shot ingestion by waterfowl is a real problem that is difficult to detect."

As to the regulation being discriminatory, Rudd said in his order that, "While the regulation may tend to affect those parties who live around a certain area, it does not apply exclusively to them but to anyone who hunts (in those areas).

"If a waterfowl hunter travels from Key West to hunt in Leon County, he must use steel shot as well as (do) those local residents who paddle from their backyards to the nearest duck blind," Rudd ruled.

Rudd's denial of a permanent injunction followed his earlier action on December 22 when he granted a temporary injunction against enforcement of the regulation requiring steel shot in 12-gauge guns while hunting waterfowl in the Leon County area.

Rudd's order did not apply to federal regulations, according to U.S. Fish and Wildlife Service agents. Federal enforcement officers therefore maintained the ban on lead shot during the second phase of the season. The suit was restricted to Leon County and had no direct bearing on steel shot requirements for the remainder of the state.



While there are some conflicting evidence as to the effectiveness of steel shot shells, nothing was established to show that steel shot cripples more ducks than lead shot."- ***Circuit Court Judge John A. Rudd***

The decision in June followed two days of testimony in April from expert witnesses from all areas of the country. Some of those called to testify for the Commission included Dr. John P. Rogers, chief of the Office of Migratory Bird Management for the U.S. Fish and Wildlife Service, Dr. Milton Friend, director of the National Wildlife Health Laboratory for the U.S. Fish and Wildlife Service and Tom Roster, an independent ballistics consultant.

Rudd's order cited much of the testimony presented at the hearing. "The expert testimony, which was not contradicted," Rudd stated, "is that lead poisoning is a significant problem in waterfowl in the United States."

Florida is one of the primary wintering grounds for migratory waterfowl, particularly ringnecks, according to Dr. Rogers. And one of the areas which showed the highest rate of lead ingestion in gizzards of ducks was Leon County.

In answering some of the charges by the duck hunters, Rudd ruled that "the facts demonstrated that, while certain types of shotguns could encounter problems from firing steel shot, those guns are generally the more expensive double barrel or over and under guns and that the majority of modern shotguns made by leading manufacturers would be acceptable for using steel shot."

In addition, "the price of the shells alone was shown to be a fairly insignificant factor in the overall cost of waterfowl hunting,"Rudd ruled.

"While there was some conflicting evidence as to the effectiveness of steel shot shells," the order went on to say, "...nothing was established to show that steel shot cripples more ducks than lead shot."

The Commission began closing certain portions of the state to the use of lead shot in 1976 based on a set of criteria developed with the U.S. Fish and Wildlife Service. The criteria included a determination that 5 percent of a minimum of 100 ducks examined from each sample area had ingested shot in the gizzard.

The initial regulation required steel shot in 12 gauges only. In 1979-80, the Commission ruled that the nontoxic shot would be required for all gauges. This was modified to 12-gauge only, when the agency learned that certain steel shot was not yet available to hunters. The 12-gauge rule was carried over into the 1981-82 season; however, the requirement for steel shot in all gauges while hunting waterfowl in certain areas will be enforced during the coming season.

Areas where steel shot will be required this fall are the same as last year: all federal wildlife refuges; in Brevard County east of Interstate 95; in Broward, Dade and Osceola counties; Leon County, exclusive of Lake Talquin and the Ochlockonee River; Lake Miccosukee in Leon and Jefferson counties; Orange Lake and Lake Lochloosa in Alachua County and all waters of Lake Okeechobee. □

Learning To Use Steel Shot

AN INTERVIEW WITH TOM ROSTER

Courtesy of the National Wildlife Federation

Editor's Note—Tom Roster of Oregon has been involved with and personally conducted more scientific field research on the relative performance of steel vs. lead shot for hunting waterfowl than perhaps any other person. In addition, both in scientific research involving the collecting of waterfowl and in preparation for shooting seminars, Roster has personally fired probably more than 65,000 rounds of steel shot. Formerly an administrator and researcher at Oregon Institute of Technology, and then a ballistics specialist for the U.S. Fish and Wildlife Service, he now is an independent ballistics consultant. He is best known to hunters in his capacities as reloading editor of *The American Shotgunner*, technical editor of *Skeet Shooting Review*, shotgunning editor of *Fins and Feathers* magazines and for his work in developing long-range, buffered lead shot loads for waterfowl hunting.

Florida Wildlife (FW): How is steel shot different from lead shot?

Roster: Basically, steel shot is in the shape of what lead shot makers would like lead shot to be. By that, I mean steel shot pellets are highly spheric (round) because they are molded and ground to a very round finish.

Lead pellets under magnification show up quite clearly as looking more like misshapen lumps than round balls. The average shotgunner mistakenly thinks of his lead pellets as being very round, when in fact they are not.

Additionally, lead pellets are subject to several sources of deformation before they ever leave the shotgun barrel. Under combustion, lead pellets are jammed against one another. Because they are relatively soft, they crush and flatten somewhat against one another. This is called setback deformation. After lead pellets leave the chamber, they are forced through a constriction called the forcing cone which narrows the shot charge down to the internal diameter of the bore. Some of the lead pellets in the shot charge are deformed again at this point. This happens again when the shot charge enters the forcing cone ahead of the choke. Finally, all the lead pellets that rest above the shotcup or shotwrapper are unprotected from contacting the bore interior. While they travel down the bore, they scrape along the bore interior and are flattened on one side. This is called bore scrub deformation. Thus lead pellets, which are not very round to begin with, are subject to four different sources of additional deformation before they ever leave the barrel.

Steel shot pellets, on the other hand, are much rounder and more uniform than lead pellets to begin with, and are also much harder than lead pellets. On the average, steel pellets are about three times harder than lead pellets. As a consequence of this hardness, the same four forces that can deform lead pellets inside a shotgun barrel have virtually no effect on steel pellets.

In a nutshell, steel pellets emerge from the barrel much rounder and more uniform than lead pellets.

FW: What's the consequence?

Roster: The consequence is that the majority of the steel pellets in a shot charge fly truer to the point of aim with each pellet delivering its energy more efficiently than the majority of the pellets in a lead shot charge. Also, because pattern density is directly related to pellet sphericity, steel shot pellets tend to pattern more densely than lead shot pellets in unbuffered lead shot loads.

FW: What's a shot string?

Roster: When pellets emerge from a shotgun barrel, they fly through the air as a group or cloud. This cloud has width and height. We see the width and height of our shot clouds when we pattern test.

But the problem with pattern testing, especially stationary pattern tests, is that we cannot see the third dimension of the shot cloud—its length. The shot cloud is often called a shot string because shotshell pellets string out as they leave the barrel forming a cloud several feet in height and width and many feet in length. The length factor is totally hidden by a stationary pattern test because the shot cloud, which is three-dimensional, plows into a piece of paper which is two-dimensional.

In turn, we get a distorted idea of what a shot cloud looks like. On paper it looks like it has only two dimensions. As a result, many shotgunners mistakenly perceive the pellets in their shot charge flying through the air looking like a pancake. A shot cloud looks much more like a cone flying through the air. Thus a shot charge does not look like a pancake, but much more like a telephone pole flying on end.

FW: Why do pellets string out?
Roster: They string out because the pellets in a shot charge are in various degrees of sphericity and deformation when they leave the barrel. The more deformed pellets are less efficient in plowing through the air, and so they slow down and fall back quicker than the rounder pellets. The pellets that are the most deformed fall to the back and outside of any given shot string, and the roundest pellets stay at the front and nearer the center.

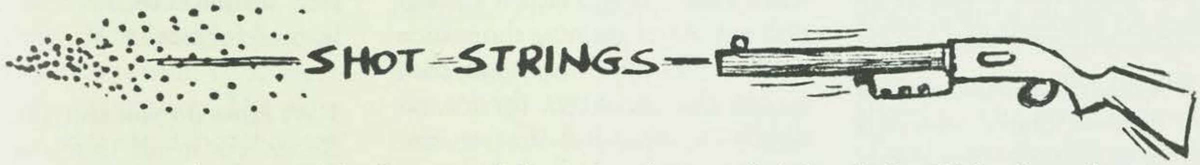
Once you understand this, you can see why a steel shot load will produce a shorter shot string than most lead loads. Because a steel load contains a higher percentage of more spheric and uniformly dimensioned pellets than a lead load, its pellets tend to travel through the air more similarly than a load of lead pellets. As a result, the steel pellets cluster closer together, the string length at any given distance is shorter and the overall diameter of the pattern remains smaller.

FW: How does this affect shooting steel shot vs. lead shot?
Roster: The shorter the shot string and the narrower its diameter, the more difficult it becomes to intercept a target crossing at an angle through the string. And most waterfowl hunting shots are abrupt angle shots, unlike quail hunting where straight-away or very slight angle shots are most common.

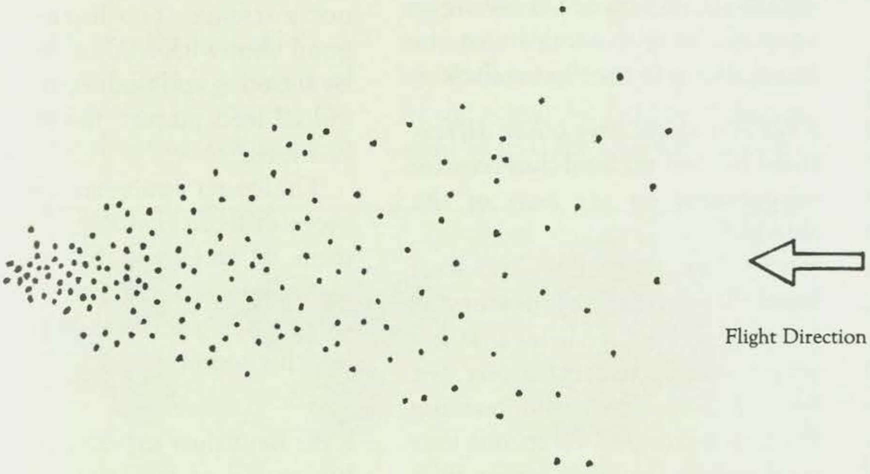
It is much easier to intercept a moving target with a telephone pole 15 feet long and four feet in diameter, than one 10 feet long and two feet in diameter.

FW: Is that the relative difference in size between lead and steel shot strings?
Roster: No, not necessarily, But remember, as the distance to the target increases, the string length and diameter enlarge. At any given distance, a steel shot string will be shorter and narrower than an unbuffered lead string.

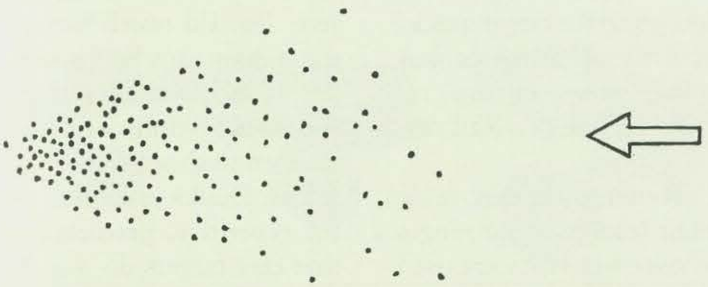
FW: By how much?
Roster: That's difficult to say because string length and diameter



Pattern sheets reveal the diameter of shot strings but not their length. Steel is harder and more nearly round than lead and it deforms less. Therefore, steel shot strings are both shorter in length and smaller in diameter than lead shot strings fired from the same barrel. Correct pointing of the gun is more critical with steel, but steel produces fewer flyer pellets which cripple birds.



1¼ oz., No. 4 lead
169 pellets
Full choke, 50 yds.



1¼ oz., No. 2 steel
157 pellets
Full choke, 50 yds.

Learning To Use Steel Shot

are all relative to the sphericity of the pellets in the shot charge after they emerge from the barrel. But generally, I'd say at 50 yards, a steel shot string made up of steel pellets two sizes larger than an unbuffered lead shot load shot string, will be only about two-thirds to three-fourths the total length of the lead shot string, plus it will be about 20 narrower in diameter. At 50 yards, both strings percent will be at least 10 feet long.

The consequence of this is that the steel shot shooter must be a more precise gun pointer than the lead shot shooter. It is harder, in other words, to hit with steel shot than with lead shot assuming you are using the same gun and choke.

FW: Why the choke assumption?
Roster: Because choke not only affects the diameter of the pattern, it also affects the string length. Unknown to most shotgunners, a more open choke not only enlarges the diameter of the shot cloud, it also *lengthens* it.

Choke plays a very important role in the shooter's ability to hit a target. And many experienced lead shot shooters initially experience difficulty in hitting as consistently with steel shot loads as with lead shot loads. This makes a lot of sense when you think about it, because most waterfowlers tote a full choke and a few a modified choke for waterfowl hunting. The full choke produces the shortest string possible with steel and makes hitting the most difficult. You get away with a full choke with lead because lead pellets are deformed enough that the full choke yields a string length longer than with steel, and the lead string is long enough to make hitting an easier proposition than with steel.

A modified choke, while it opens patterns about 10 percent with lead, has little effect on steel pellets size No. 1 and larger. With steel shot, particularly the larger sizes, a modified choke tends to pattern about the same and produce a string length about the same as with a full choke.

In order to enlarge your pattern diameter and lengthen the string length to make a significant difference in your ability to hit the target with steel, the shooter should initially go all the way to an improved cylinder or skeet choke. This may seem somewhat radical to the shooter accustomed to lead, but if he would just pattern test with steel and practice shooting with steel, he'd see what I mean.

Some ballistics theoriticians will tell you that the string length difference between lead and steel, while there, is so small it's insignificant. After training thousands of shooters to shoot steel shot across this country, there's no doubt in my mind that an improved cylinder choke is the single simplest and most effective adaptation a shooter can make in learning to shoot steel. After skill and confidence are gained shooting an open choke with steel, he or she can work up to the tighter chokes.

FW: Are there any other differences in steel vs. lead that require adjustment on the part of the shooter?
Roster: Yes, there are. The steel loads that are available possess, as a group, a velocity level that averages a little over 100 feet per second faster than lead hunting loads as a group. That means that steel pellets two sizes larger than lead pellets get to the target quicker, particularly at distances less than 30 yards. This, in turn, requires an adjustment in lead distance.

Many shooters find they must reduce their leads at close ranges with steel over what they are used to with lead. At distances of 30 to 50 yards, steel vs. lead time-in-flight figures are very close, so no lead adjustment is necessary, At pass shooting distances beyond 50 yards, steel pellets, due to their larger diameter for the same weight, slow down faster than lead pellets. As a result they take slightly longer to get to the target at extended ranges. Many pass shooters find they must increase their leads when shooting steel beyond 50 yards over what they are accustomed to with lead.

With many individuals, particularly those who hunt only once or twice a year, these adjustments in lead distances are irrelevant because they shoot so little lead their mind hasn't really sorted out lead distance with any projectile type. But for the experienced lead shot shooter, some adjustment in lead distance usually has to be learned for steel shot.

FW: How do you learn it?
Roster: As in all things athletic, you acquire a learned skill only through a reasoned series of repetitive practice sessions. Shooting a shotgun is a skill—an art—it is not a science. You learn to be a good shot with lead or steel only by shooting and finding your individual lead picture through trial and error.

The longer you've shot lead, the more difficult, usually, the transition to steel will be. You can reprogram your computer the best by practicing with steel before the hunting season.

FW: Isn't that expensive?
Roster: All of shooting is expensive. But I'd much rather spend the money on a half case of steel, use it in practice and learn to shoot successfully with it, than try to learn to shoot it by shooting at ducks. Ducks just don't give you the repetitive, predictable angles that clay targets do, which are so

necessary to learning a whole new ball game.

Also by trying to learn to shoot steel by shooting at the real thing, your anxiety level goes way up. This increased nervousness makes you a poorer performer and all that usually happens is that you get frustrated trying to shoot steel. Once you get frustrated, you lose your confidence. And confidence is everything in shooting. Lose confidence in steel shot or any other type of shotgun shell and you'll never do well with it.

FW: Any other shooting tips?
Roster: Yes. Learning to shoot a shotgun is a matter of teaching your mind—programming your computer through trial and error—what sight picture and lead distance you must see to hit a moving target at a given angle, speed, and distance. Again, you only learn this through practice. Each practice session adds more data to your computer. The more experienced the lead shot shooter, the greater will his struggle tend to be in learning to shoot steel. He's got years and years of habits to unlearn and that's not easy, believe me.

You will greatly foul up your computer and feed it all sorts of conflicting data, if you try to interchange shooting steel and lead shot. Remember, steel shot is different. You use different chokes, different sight pictures, different loads, and your timing must be more precise than with lead. If you shuffle back and forth between lead and steel, your mind will never be able to sort out what is the correct sight picture for you when shooting steel.

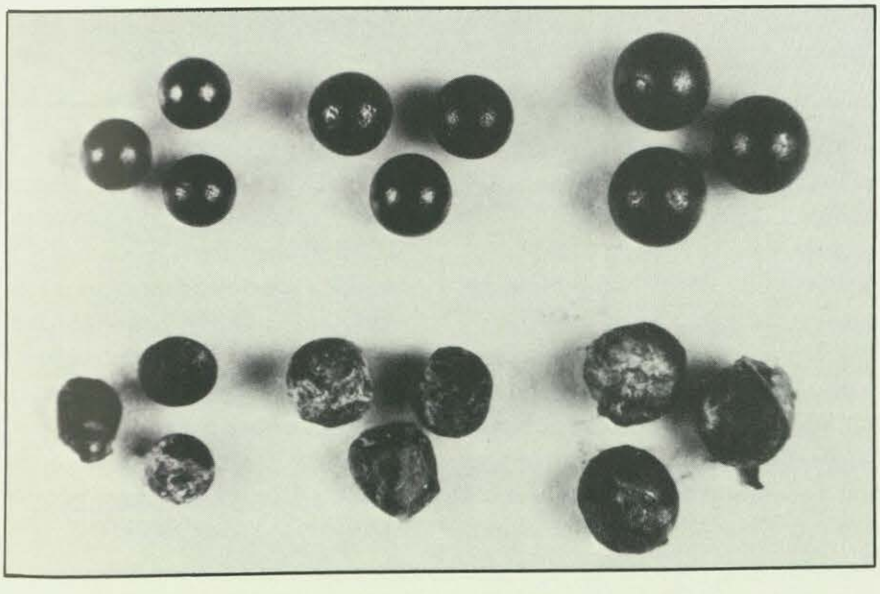
Therefore, before waterfowl season, it's best to wean yourself away from shooting lead shot. Go ahead and shoot lead for awhile in early practice sessions. It helps get you back in the groove of shooting in general. But as duck season approaches, devote your last four or five practice sessions to steel shot only. This builds a good, steady, consistent data base in your computer. And try during the season to use steel shot as much as possible. Don't switch back and forth with lead.

FW: Any other tips?
Roster: Yes. When selecting loads, be sure you follow the general rule of thumb of using a pellet at least two sizes larger in steel to get the same job done you'd expect of a lead pellet. Now remember, this is a general rule of thumb only, and certainly there are exceptions to it. However, the preponderance of the scientific data available on steel vs.lead shot performance for harvesting waterfowl by a population of untrained hunters show that a steel pellet two sizes larger than a lead pellet will perform about the same.

For ducks I prefer No. 2 steel over decoys and steel 1s for pass shooting. Of all the data I've personally collected, the steel 4s have never worked as well as the steel 2s or 1s on ducks. I reserve the 4s for very close shots at ducks over decoys only and for teal. One other note, I've gotten great performance from steel 6s on ducks. They seem as good as 2s out to 50 yards and better than 4s. But, you can't buy them yet.

Certainly there is still much to be learned about steel shot and lead shot performance. There is a great deal of room for a wider variety of steel shot sizes. But one thing I do know: a hunter properly trained to shoot a proper load of steel can harvest waterfowl just as efficiently as the lead shooter. The steel shooter will effect his harvest differently, that's all. And one other thing is certain. The steel shooter needn't worry that he's leaving a poison behind him.

FW: Anything else?
Roster: Yes. Remember shooting is an athletic skill. You learn a lot quicker if you've got a good coach looking over your shoulder and helping you struggle toward your goal. No one can learn to shoot steel shot well simply by reading about it, just as you can't learn to play golf by just reading or talking about it. ☐



Pellets in this picture were recovered from the muscle tissue of bagged birds. Much of the deformation of the lead pellets (lower group) took place before the pellets struck the target; steel pellets remained spherical when fired and upon impact with the target.

CONSERVATION SCENE

Experimental Duck Harvest Report

During the special five-day experimental duck harvest held in September 1981, 46 percent of the waterfowl taken were wood ducks and 44 percent teal (both green-winged and blue-winged). The remaining 10 percent was represented by a number of other species.

That's the result of a sample survey of some 200 waterfowl hunters which was conducted following last year's special season, according to Tom Goodwin, Chief of the Commission's Bureau of Wildlife Resources.

This year the Commission will be implementing the second of the three-year experimental harvest, sanctioned by the U.S. Fish and Wildlife Service. The special season is slated in Florida from September 25-29.

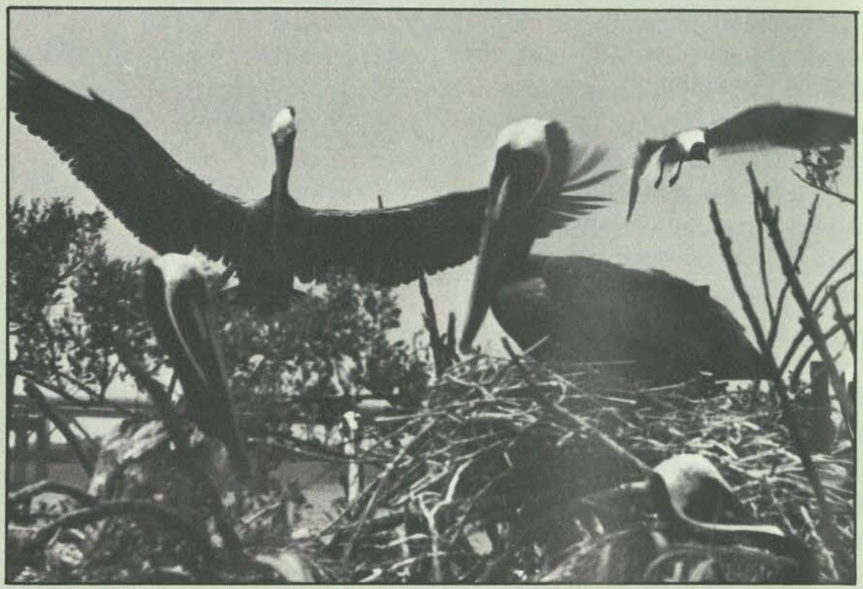
"The experimental season was granted for three years with the understanding that if harvests were not detrimental to any species of waterfowl, it probably would be granted annually," said Goodwin. He said results from the first-year activity show the program is working well.

Goodwin stated the main purpose in the early season was to allow the taking of teal and wood ducks. "Teal are known to be early migrators and generally pass through Florida en route to Cuba, Central and South America before the regular waterfowl season begins."

He said a major factor in justifying the season was to allow hunters an opportunity to harvest Florida wood ducks before northern wood ducks migrated into Florida.

Goodwin said concern had been expressed by waterfowl biologists in the northern part of the Atlantic Flyway that an early harvest might have an impact on migrating wood ducks into Florida. "However, research has shown that most northern wood ducks don't really show up in Florida until at least October."

The experimental duck season has a bag limit of four birds per day, no more than one of which may be a species other than teal or wood duck. Daily hours are one-half hour before sunrise to sunset. Hunters are reminded that they must have both a state and federal duck stamp, in addition to the hunting license, before hunting waterfowl. —*Ron Stock* ■



Panama City Pelicans

Stan Kirkland

NEW ROOKERY: A brown pelican rookery was discovered in West Bay near Panama City. The rookery is situated on a tiny spoil island clearly visible from Hathaway Bridge on U.S. 98. It represents the first time pelicans are known to have nested in the vicinity. At one time, pelicans nested near Port St. Joe, but currently the nearest rookery to Panama City is at Cedar Key. The nearest breeding pelicans are in Louisiana. On the subject of pelicans, Lovett Williams, leader of the brown pelican recovery team, has taken exception to reports that the species is being delisted on the federal endangered species list in Florida because the population here has recovered from the effects of DDT. According to Williams, "the Florida brown pelican has never been contaminated significantly with DDT and there has been no recent change in the status of the brown pelican here. Actually, he wrote, "the species was listed (as endangered) through a misunderstanding about its status in Florida in the first place. An interesting fact of the matter is that DDT was not a problem in Louisiana either. Ironically, the pelican's demise there was caused by endrin, a pesticide used as a substitute when DDT was banned." ■

Dr. deLorge Appointed

Dr. John O. deLorge of Pensacola has been appointed to the Wildlife Alert Reward Association by Colonel Robert M. Brantly, executive director of the Game and Fresh Water Fish Commission. He will serve with 12 other citizens on the Association which oversee the Wildlife Alert reward program.

Wildlife Alert is a program in which persons who report wildlife and freshwater fish law violators to the Commission may become eligible for a reward.

The new Association member has a long history of conservation activity including memberhsip in the Audubon Society and the Bream Fisherman Association where he serves on the board of directors. He is a past regional director of the Florida Wildlife Federation, and a camper and canoe enthusiast who has been involved in mapping canoe trails in Florida.

Holding a doctorate of research psychology specializing in animals, deLorge is employed at the Naval Air Station in Pensacola in the Naval Aerospace Medical Sciences Department and is chief of the bio-environmental science department. ■

CORRECTION

In reference to the Ochlockonee River article by Max Hunn in the July-August issue, administrative maps of the three national forests in Florida cost $1 each, rather than 50¢ as stated. The Forest Service's canoe trails brochure covers all three forests including the Ochlockonee River in the Apalachicola Forest. The Florida mailing address of the U.S. Forest Service is National Forests of Florida, Post Office Box 13549, Tallahassee, FL 32308. ■

Alligator Hide Sale

The June 17 alligator hide sale held by the Commission at the Gainesville Research Laboratory only attracted three bidders. The highest bid was $120,059 (an average of $22.42/foot) by TCIM of Paris. The next highest bid was $98,880 ($19.65/foot). Some 708 alligator hides were offered at this recent sale. ■

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Seminole Ranch Hunts

The Seminole Ranch, a newly established Type I wildlife management area in the central part of the state, will offer archery, muzzleloading gun, and modern gun hunts beginning this fall and a turkey season this spring.

According to the Game and Fresh Water Fish Commission, the St. Johns River Water Management District, owner of the 28,000-acre landholding, has approved an agreement with the Commission allowing the management of hunts on a 4,400-acre site in Orange County. The Seminole Ranch borders the St. Johns River north of State Road 50 in Orange, Brevard and Seminole counties.

The Commission has established a quota of 50 hunters to participate in each of the archery, muzzleloading gun and modern gun hunts this fall with a bag limit per hunter of one antlered deer and one wild hog. For the two spring turkey hunts scheduled, there will be a quota of 25 hunters per hunt.

Dates set by the Commission for the hunts are for archery, Dec. 3 through 6; muzzleloading gun, Dec. 10 through 13; and modern gun, Dec. 17 through 20. The spring turkey hunts will be March 26-27 and April 2-3.

"Since there will be a limit of 150 hunters to utilize the management area during the fall hunts and a total of 50 hunters for turkey hunts during spring, we will be selecting participants through a random drawing of all applications," said Eddie White, quota hunt director for the Commission's Division of Wildlife. Hunters will be given a choice of choosing one of the five hunts on their application.

White said applications will be available September 20 for hunters from regional offices to submit for inclusion in the random drawing. Postmarked applications must be received no later than November 1 at the Commission's Tallahassee headquarters for inclusion in the random drawing.

Rules and regulations, as well as a map of the new management area, are available from regional offices.

Waterfowl hunting on the management area will only be permitted in the St. Johns River and connected marshes and lakes during the federally established season. ■

Everglades Deer Story

A detailed account of the Everglades deer problem—a matter of national attention this past summer—will appear in the November-December issue of *FLORIDA WILDLIFE.* ■

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This public document was promulgated at a cost of $28,350, or $1.05 per copy, to provide information regarding wildlife resources of the state.

Income from subscriptions defrays a substantial portion of the above listed cost of magazine production.

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Perky's Bat Tower

By Mary Ellen Smith

The "no-show" bat Leonard Lee Rue III

In the days before mosquito control, how did Floridians cope with these stinging pests? The answer is, "They didn't." At least not very well, but they tried. Pioneer Floridians slept under mosquito netting; they annointed themselves with citronella; they made smudges, burning "insect powder," old socks, fish nets, almost anything that would create smoke without much fire. (Smoke keeps mosquitoes at bay.)

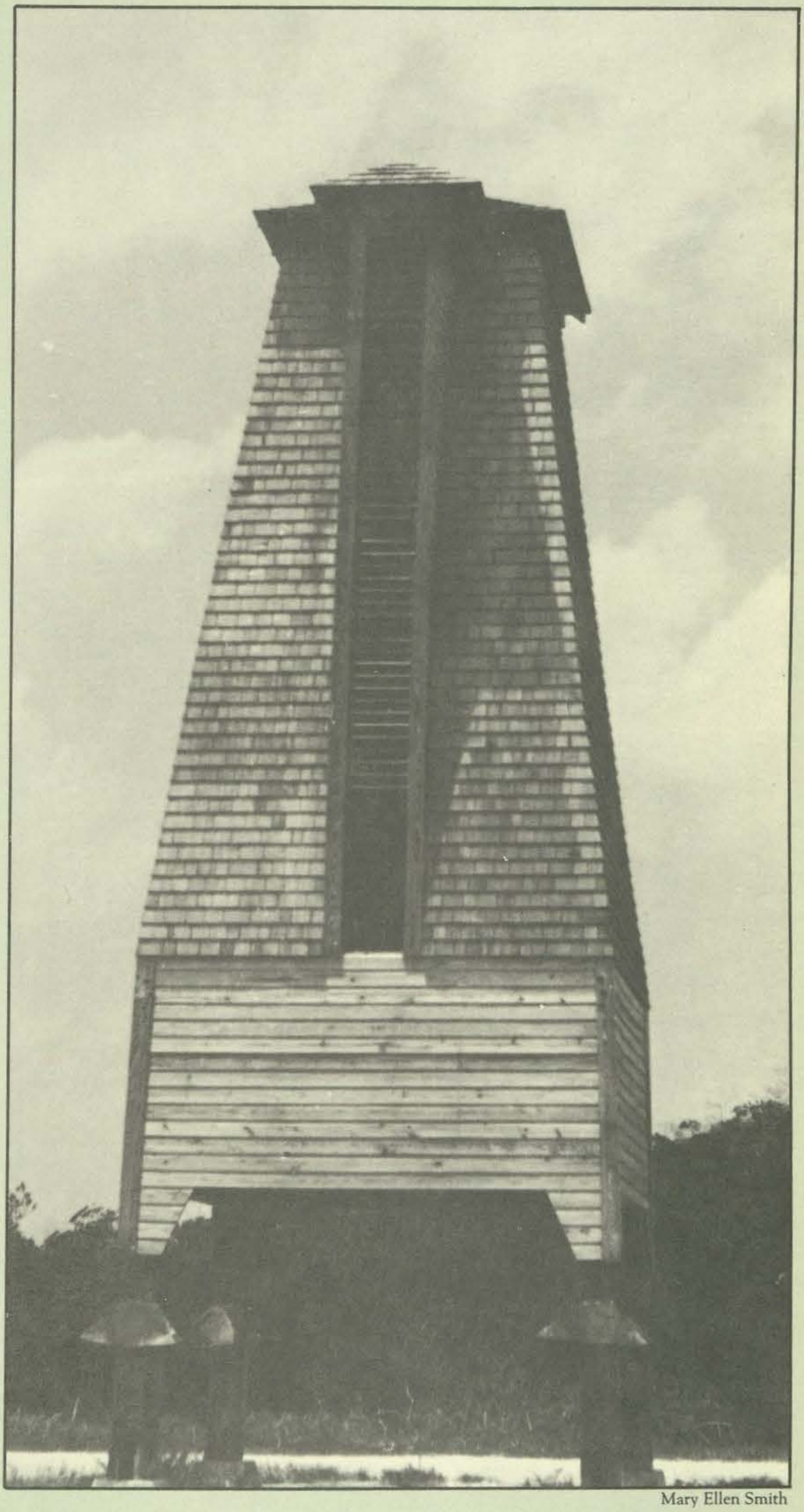
But what was probably the most ingenious attempt to cope with the troublesome critters was the bat tower which still stands on Perky Key (now called Sugarloaf) some 16 miles northeast of Key West.

The bat tower, recently refurbished as a tourist attraction of sorts, is a 30-foot high shingled structure, equipped with louvers so that bats can fly in and out. It was built in the 1920s by R. C. Perky, a land developer who felt that sales would zoom if he could get rid of the mosquitoes.

Perky heard of a bat tower in Texas. The theory was that bats eat great quantities of mosquitoes and all he would have to do was attract the bats by providing them with a suitable roost and they would take care of the problem.

He sent for the tower plan. After the construction was completed, he sent for the bait that would lure them to their new home. The bait turned out to be a small box of a substance so foul smelling that even the buzzards departed from Perky Key, at least so local wags said. But no bats came. Or if they did, the mosquitoes probably ate them.

The Perky settlement burned down. Perky Key became Lower Sugarloaf. But the bat tower stands, a monument to the mosquito and an idea that did not quite pan out. ●



Mary Ellen Smith

James Hutchinson
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